THE

SOUTHERN AGRICULTURIST.

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PART I.

EDITORIAL AND ORIGINAL.

An Address delivered before the South-Carolina Agricultural Society, at its Anniversary Meeting, 22d August: by Dr. THOMAS LEGARE.

"The subjoined address was delivered by Dr. Thomas Legare, as Chairman of a delegation from the St. Andrew's Agricultural and Police Association, before the South-Carolina Agricultural Society, at its anniversary meeting the 22d August last, and published by their request." We think all the Agricultural Societies in the State should make "a long pull, and a strong pull, and a pull altogether," in the advancement of Agriculture, both as a science, and as the only sure foundation, of general and permanent prosperity. To effect this, no better means can be devised, than a regular correspondence between the Societies engaged in this laudable undertaking, and an annual meeting at some convenient point, of delegates from every Association, forming an Agricultural Convention; when all matters, touching the interests of Agriculture shall be freely discussed day after day, till the Convention exhaust their subjects. A meeting of one day can do but little good, while a protracted session cannot but result favorably to the Agricultural pursuits of every section represented in the Convention, and we may reasonably hope, sound practical information would be widely diffused among others. Dr. Legare does not estimate too highly the importance of Agricultural education, and we think its friends in, and out of the Legislature, should never tire or relax in their ex-

ertions, to obtain from that body, the patronage Agriculture so justly claims of them. Instead of being cherished as a darling child, the very apple of the eye, it is treated too much like a foundling, a thing foisted upon them, which they care for only, and no farther than they must, to preserve life. While other States, endeavor almost to force nature, by liberal bounties for the production of fruits and fibres, which seem ill adapted to their climates, we look on in stupid wonder, and it is much to be feared, when we shake off the lethargy which now holds us as spell bound, the sceptre will have passed into other hands. Dr. Legare says with great force and truth, that "every man's farm has gold diffused throughout its surface that will reward the labor of looking after it." But labor wants a stimulus, and not less, a proper direction. The Legislature can give the one, and Agricultural studies and experiments, can afford the other. We are mortified at the supineness of the *South*, but do not despair—*Rip Van Winkleism* may continue long, but cannot last forever.

Gentlemen of the South-Carolina Agricultural Society.

We are deputed by the St. Andrew's Agricultural and Police Association, to convey their respects to your very useful and enlightened body, and by their readiness on this occasion, in accepting your courteous invitation, they manifest every disposition to cultivate a social intercourse with all the Agricultural Societies within their reach.

It is their settled conviction that much, as has already been done towards the improvement of our craft; much remains yet to be done, by the co-operation springing from these friendly alliances, by concentrating the now scattered and isolated efforts of individuals and communities.

The interchange of thought in the intellectual, like that of goods and chattels in the commercial world, contributes to the comfort and the intelligence of the human species, by sending abroad the light of science which more favorable circumstances or persevering research may have developed amongst us; and it is the peculiar privilege of the intellectual benefactor, that while he enriches others, he beggars not himself.

Gentlemen, there never was a period in the history of our country, in which there has been so much necessity

for union of purpose and co-operation of energies in our very ancient and useful calling.

We have now arrayed against us, not only the natural and incidental difficulties always to be encountered in the progressive improvement of any art or science; but we have to surmount the ungrateful and unnatural opposition, that threatens us in the political and moral world; and up to but a very recent period (caused by high tariffs and other oppressive acts of congressional legislation,) the stream of emigration emptying itself into the West, had so effectually drained us of our redundant population, as to have rendered any improvement of tillage unnecessary, and therefore impracticable, for man is but the creature of necessity, and will only labor in obedience to its laws.

Now, however the virgin powers of our soil having been exhausted by the scourging cultivation of our ancestors; and the inducements to emigration, much, if not altogether removed by the present monetory difficulties of the West, we will be chained down by necessity, if not by patriotism to rebuild the ruined mansions of our ancestors: and by the aid of persevering and enlightened culture, to bring back into profitable employment the now barren waste of old fields, that form so melancholy a feature in the Southern landscape.

Thus it is that the high yellow lands of our Sea-Islands, but very recently supposed to be useless, as worn out by the exhausting influence of indigo, have been brought back to life by the judicious application of recently discovered manures (at their very door) and now form the appropriate soil of our great staple.

I fondly cherish the hope, that further improvements, not only in the culture of the earth, but in the introduction of foreign plants, congenial to our climate and soil, will open new avenues of wealth and comfort to our beloved state. Already are we encouraged in this anticipation, by the enlightened and praiseworthy efforts of D. Perrine of Florida, to introduce amongst us some tropical plants, useful for their foliaceous fibre, and peculiarly valuable to us from the fact, that they seem appropriated to the sterile lands of our pine barrens, and some to the rich loam of our now deserted swamps.

Imagination can hardly calculate the immense values that will be thus brought into existence by this agricultu-

ral contribution, to the comfort and happiness of mankind.

Agriculture, gentlemen, has been properly termed the nursing mother of the arts and sciences; and, that society must retain much of the impress of barbarism, which feels no obligations to cherish with peculiar care, the interest of our honorable calling. Efforts are now about to be made (and I hope they will be cheered on by every individual in my hearing,) to excite an *esprit de corps* among the planters of the South, by inspiring them with a consciousness of the dignity of their claim upon the legislative consideration of the State, that they may move on in one undivided phalanx, to the councils of their country, and demand an appropriation of a portion of the revenue, (to which they may be said almost exclusively to contribute,) toward the establishment of an agricultural professorship at the College, under the patronage of the State; and, as impressively recommended by the eloquent pen of Mr. Elliott, of Beaufort, to incorporate a system of agricultural education into the elementary course of our free schools.

Thus will the Agricultural Societies of South-Carolina, having already worked most important changes in the tone and temper of the Southern planter, receiving constant contributions from minds so disciplined, be destined to accomplish further and more important revolutions, not only in agricultural developments, but in the general intelligence of the community.

But a few years back, agriculture was left in the hands of the most ignorant and unenlightened portion of society, while all the intelligence of the country was devoted to what was exclusively (and so far improperly termed) the learned professions. It is now very common, on such occasions as the present, to hear subjects of chemical agriculture discussed with the readiness, the skill, and the science of Sir Humphrey Davy, by gentlemen whose avocations would seem to preclude the possibility of such profound acquirements.

But the fact is this, in an age of impetuous struggle after knowledge; and the march of mind has far outstripped the fondest anticipations of the Philosopher and Philanthropist, and surely the Carolina gentleman will never be found below the general standard of intelligence that pervades the mass of mankind. Let us, therefore,

cherish, with all the means in our power, our agricultural societies, and our agricultural periodicals, as the proper nurseries of industry and reward, envying not those (who influenced by the senseless cant against book planting,) and thinking themselves independent of the agricultural history of other times and other countries, cast aside with disdain, the lessons of science and the help of the arts.

Where would agriculture now be, were it not for light shed upon her path by the rays of Chemistry, of Botany, of Zoology? and indeed more or less by every branch of science; for it is so ordered by the wisdom of Providence, that as we have to feed and clothe the world, all the laws of nature are made to contribute to the benevolence of our purpose.

By such sources of intelligence and such enlightened councils, we hope to see the current of emigration checked; and those energies which are now diffused and wasted in uncultivated countries, concentrated at home.

Our resources thus developed, will abundantly reward us, and our hitherto neglected soil, will pour forth from its bosom, ther ich and inexhaustable treasures that have hitherto lay hidden from the lazy and indolent.

Every man's farm has gold diffused throughout its surface that will reward the labor of looking after it; and the same monitory lesson that was given by a philosophic farmer of old to his insolent and unprofitable sons (go and dig for it,) is strictly applicable to those overlooking the resources which nature has bountifully spread at their doors, leave the home of their childhood, the grave of their fathers, and their patrimony consecrated by a long train of ancestry, to commence a new course of existence in a foreign land.

The great aim and end of our creation is, to attain this very civilization, from which some are flying; and one acre of our generous soil, with the blessings of civilization, is worth a thousand of wild prairie land frequented by the howling savage. With this brightening scene of prosperity springing up among us, it will become unprofitable if not unpatriotic, to desert the scenes of all our earliest and dearest associations, but we will remain at our post and proudly exult in the renewed and growing prosperity of our native State.

So much for the unavoidable and internal difficulties we have had, and will have to surmount, in our future

progress in improvement. These we have seen can, by a proper direction of our means, be all successfully overcome.

But, gentlemen, what shall I say of those impediments thrown in our way by the unkind and indiscreet legislation of the General Government, as manifested in the undisguised patronage lavished upon the manufactoring and monied interest of the country, to the decided injury of the Planter.

It is idle to murmur, for we will not be heard. We must use more efficient efforts to force our deputed Government to confine its legislation within its circumscribed limits.

Let us endeavor to divorce it from all corporated institutions whatever, and leave the people to their own honorable enterprise, and my life on it, the Agriculturist of the South will immediately take his stand above the rich capitalist of the North, whether of banking or manufacturing resources.

The Government thus standing aloof, and leaving individuals and communities to their own untrammelled efforts, man will rival man, and community will rival community, with an honorable emulation. Confidence will be naturally inspired, and the old Amsterdam credit system, the representative but not the substitute for specie, will be rescued from its present unsettled and really unsound position, to be placed upon a more firm and lasting foundation.

We shall then see merchants springing up and thriving amongst us, to barter at our very doors for the very staple of our soil. We shall see our decayed marine rebuilt as it were by enchantment; and our commerce with whatever country it may suit us to exchange the products of labor, will absolutely be carried on (however impossible and disunion like it may now seem to some minds,) without the aid of New-York agents or New-York capital.

As the representative of our Association professedly formed for the police regulation of our peculiar species of labor, it would seem proper to make some remarks with regard to our danger from the efforts of the Abolitionists of the North.

The strong ground assumed and adhered to by the inspired intellect of Calhoun, of rejecting their petitions, having been given up by most of the Southern members

of Congress, this deeply vital question now stands subject to the jurisdiction of that body, and they are only restrained from action by a fearful sense of its inexpediency.

What we have to hope from the tender mercies of these pretended enthusiasts of liberty, you can well imagine from the untiring virulence with which they have hitherto pursued their purpose.

What we have to expect from the vigilance and firmness of our Southern agents, may be gathered from the readiness with which every combination (that a sense of common danger would seem to cement) is broken into fragments by the political influence of the presidential question.

The truth is, gentlemen, the planter will have to look to himself, and not confide his dearest interest so exclusively to mere professional men; and indeed he should in no case even look for relief from congressional aid.

This safety is to be found in the immutable laws of human nature.

Stimulate enterprise; develope the energies of the Southern section; carry through your Rail Road communication with the West; establish a direct trade with Europe; and take into copartnership the great bulk of mankind; and you will then (as if it were by a new revolution) enlist on your side the powerful and irresistible eloquence of self interest.

This I acknowledge is a melancholy and impoetic picture of the human character; but it is a matter of fact, one and all, the restraints of law and gospel have at least to make their appeals to this all pervading principle of his nature.

Let us then, gentlemen, be up and doing. Let every man direct his surplus means towards the successful accomplishment of the magnificent and truly Southern schemes of the day; and we shall then see emigration cease; our general government will be restrained by the political power, we will then possess in the council of our country, to adopt the let alone system.

The abolitionist will be silenced by the overawing influence of an enlightened public opinion; and we will be permitted (while sitting under our own vine and fig-tree) peaceably to cultivate the literature of Agriculture.

The Management of Negroes.

Marlborough, Sept 10th 1838.

Sir,—Though a young planter and of limited experience, my observation thus far has led me to the conclusion, that the management of negroes is a matter of much higher importance, than is generally understood or practiced. This is the starting point from which are formation in our agriculture must commence, and I believe experience must prove all efforts without it, fruitless and vain. There is probably not one in twenty, if this fact was put to him individually, but would readily acknowledge its truth, whilst at the very instant his practice is the farthest from it. I am free to admit the truth of the old adge, that "we are more ready to give advice to others than to follow it ourselves;"—and so it is in this case, as in every thing else, and the practice has fallen short of the precept. But, be this as it may, it is certainly true that most planters fall far short of what they are able to perform; arising in most cases, from negligence, and a want of energy, or a divided business incompatible with their planting interest. There is no employment I am acquainted with that requries more constant and unremitted attention than a plantation when profitably managed. The master must have a thorough knowledge of every part of his business. It is not alone his duty to plan every thing, but he must see that every plan is executed properly, and as he intended it; no profits can be obtained without it, I care not what may be said to the contrary. The first thing that presents itself to his most serious consideration is the management of his negroes; and upon this depends every thing, but how wretchedly is it often neglected! I will readily acknowledge the difficulties to be encountered in reducing to system and order the complicated operations of a plantation, where nothing like system or order ever prevailed. But the difficulties are at the beginning alone, and you are soon remunerated ten fold. Where negroes have been well fed and clothed; and strict, even-handed justice has been meted out both to them and their master, tempered with kindness and humanity, you will as surely obtain the two great principles in their government, *fear and love*, as effect follows cause. Their attachment frequently reaches enthusiasm, and I am in-

clined to repose much confidence in it. To effect so desirable a state of things, the master should make himself thoroughly acquainted with their habits, character and disposition. He should invariably give a willing ear to all their complaints, put them to the test of investigation and apply an efficient remedy. They will then look up to him as their great arbiter and protector in all their difficulties, which will inspire both respect and confidence, and he will find them much more true to his interest than they are generally supposed to be. He should never suffer them to be degraded either in the manner of inflicting punishment, or in any other way. They should be punished in moderation and without passion. The overseer should be a man of fair moral character, of good sense, mild temper and great firmness. What difficulty could be found in introducing the strictest order and discipline in a plantation that had been so managed? Not the least. But, when they have been treated with injustice and falsehood, and a deaf ear turned to their complaints: the master knowing nothing except through the medium of an overseer, probably as trifling and contemptible as the negroes;—the worst consequences must be anticipated, and it would be a Herculean task to introduce any thing like system or order. Nothing is more common or more pernicious, than to invest your overseer with discretionary powers in inflicting punishment. Passion, prejudice, or ignorance, often makes him grossly abuse it. The negro does not go to his master for protection, for he will find none there, but must quietly submit to the despotic will of one but little his superior. It would be almost impossible to organize any regular system under such government. The laws necessary for the regular and proper management of a plantation, should be few and simple, operating alike upon overseer and negro, and as immutable and inviolable as those of the Medes and Persians. There should be a certain and definite penalty imposed upon both, immediately following their violation. The penalty imposed upon the overseer should be pecuniary, that upon the negro corporeal. The overseer that would not submit to this, is not worth having, for if he has intelligence and honesty enough, efficiently and faithfully to discharge his duty, the advantages both to himself and employer, would be presented in so strong a light, that they could not be misunderstood.

I will at no distant period, enlarge upon this subject, and submit to your consideration, some laws for the government of a plantation.

Yours with high esteem,
PEE DEE.

On the Topping of Cotton.

Orange, Sept. 13th, 1838.

In the September number of the Agriculturist, some information on the topping of cotton was called for, and I have here hastily thrown together some remarks, gathered from my own experience on the subject.

I always top my cotton; and I am so fully convinced of the importance to the plant, of doing so, that I could hardly be persuaded, with my whole crop, to leave it undone.

I commence topping, from about the 20th of July, to the 1st of August. That difference should depend upon the forwardness or backwardness of the plant. If the seasons have pushed forward the plant, so that it has attained a sufficient height, commence about the 20th July. If the seasons have been otherwise, delay ten days,—Not longer, I would advise.

I have for several years closely observed the effects of topping cotton,—and from what I have seen, would rather commence ten days earlier than the first period I have mentioned above, rather than delay one day after the 1st of August.

Several years ago, my mules bit off the tops of several stalks in my fields, about the last of June, (the cotton was then about two feet high) and some time in August, the difference between the stalks topped by the mules and the rest of the field, which had been but lately topped, was so perceptible, that it would have arrested the attention of the most careless observer. The stalks topped in June, were loaded almost to breaking down, with grown bowls, young bowls, blossoms and forms, which those around them had just fairly commenced bearing; and the cotton topped early, threw off long branches, which continued to bear, with the rest, until frost. Last year I topped a stalk in June, and the difference between it and the surrounding cotton, was as before.

I have, notwithstanding, never commenced to top earlier than the time first mentioned, because the *whole* crop did not attain a proper height before that time. It is a work very easily accomplished. A brisk, active hand will easily top from five to seven acres a day. I have usually made my negro women and the young hands top my cotton, and they generally average about five acres to the hand. They pluck off with the thumb and fore-finger, the tender and fragile top, which is made up of small leaves and forms, and which is so quickly done, that a hand can *top* as fast as he can commonly walk.

It was the observation of a gentleman, of some reputation as a planter, that he wished his neighbours would splice *his* cotton with that which they took from their own, but my own experience has proved to me that his observation was more witty than sensible, and had proceeded from any thing rather than from full and fair experiment.

COTTON.

Salt, Flax, &c.

Highlands Santee, 17th August, 1838.

Mr. Editor,—I am one of those who are never better pleased than when they see the resources of a country developed, and employment provided for all we are able to work. Every one is a public benefactor who introduces a valuable plant, or improves the value of those already under cultivation. Too much attention cannot be paid manures, either in obtaining new ones, or in the application of those well known. With your permission I propose to compile some facts by which your readers may profit if they choose, while doing so, will afford me occupation for an hour or so. It seems to me too little pains are taken to ascertain the properties and value of salt as a manure. That it is of great value to man, we may rationally infer from the great use the Creator of all, has made of it, and the facility with which the greatest abundance can be obtained. Whatever is most valuable to man, and the animal creation, exists in the greatest abundance. There can be no doubt the article of flax can be added to the productions of the higher portions of the Southern States, and pay the producers a fair profit

Under this impression I will show how flax fields have been treated, and with salt as manure. It has been found to advantage to salt the hay intended for the stock as it was put up, both to the cattle, and their dung as manure for any purpose. Flaxseed sowed with salt, bushel for bushel, will yield a valuable return of seed and flax, both as regards quantity and quality; a greater quantity of seed and a longer flax. Some have sowed as much as five bushels to the acre, but others have thought so great a quantity injurious to the land. Be that as it may, it has been proved by actual experiment, that salt is friendly to flax. Fields of the same quality of soil, side by side, have been sowed, one with flaxseed and salt, and the other with flaxseed alone. The product of the first was excellent, while that of the last was scarcely worth gathering. It has been found best in wet land, to delay salting till the flax attains a height of about four inches, and then with a bushel to the acre. It is laid down with great confidence, that two bushels of salt to one of flaxseed, will never fail to produce a good crop of seed and flax, if the seasons do not prevent, and it is affirmed the seed will pay nearly or quite all of the expense of cleansing and dressing the flax. The application of salt at the rate of two bushels per acre, is most earnestly advised for oats, rye, and in fact for all sorts of grain, even Indian Corn, and the increased yield of the fields so treated, are warranted to pay at least five hundred per cent, and probably a thousand upon the cost of the salt. I am pleased to learn that salt as manure is exciting attention among our low country planters, and I do not doubt fair and persevering experiments will ascertain its value, and bring it into general and constant use, where it can be had on favourable terms.

Indian Corn on worn out land.

In some parts of our conntry it has been said it cost more to raise Indian Corn than it was worth, and the notion prevailed that the land must be strong, highly manured, well ploughed and hoed, or it would not produce half the value of the labor bestowed upon it. It can be proved worn out fields as they are called, can be made available even without manure, as experiment of the following kind has proved. Take the field as it lays, break it with a plough having a sharp coulter, and a share about

the fourth the size and weight of the common plough shares, a furrow board which will follow the coulter edgeways, turning the furrows over in somewhat a spiral form. With this plough which requires only a single horse, plough a furrow through the whole length of the field, and return with the plough on the side next to which the furrow was turned, throwing up another furrow against the first. At four feet from this, plough another furrow in the same manner; and so on, leaving a space of four feet between the double furrows through the whole length of the field. Upon these double furrows plant potatoes, leaving a space of four feet between each hill. A horse, with two boys will plough and plant two and a half acres in a day. When the potatoes come up and want tending, two boys with a horse and plough will turn another furrow, of the unploughed ground towards the potatoes, on each side, and dress them with their hoes in one day. At half hilling, repeat and the whole field will be ploughed. At hilling, the field must be cross ploughed, the earth thrown towards the crop each way, and dressed with the hoe. By this mode, two acres and a half to every horse and two boys, can be completely tilled in four days, while in the common way of managing ground, the labor of a man, a boy, and two horses, will be required. The spring following, plough between every two rows of the old potatoe hills, two furrows, which are to be thrown one against the other, and plant your corn upon them without any manure. The ploughing and planting can as before, be done by the same force, in the same time and at the same rate by all your force. "My corn was husbanded in the same manner as my potatoes were the year before. A field on the other side of the fence, much of the description and size of mine, (upon which I experimented) was two days and a half in ploughing and planting, with one man, a boy, and two horses, with a common plough. This field was planted the same day as mine, and was well dunged. My corn made its appearance about two days before my neighbor's, ripened more than a fortnight earlier, and I had the largest crop. I continued to plant corn in the same land, between the old hills as before mentioned, without carrying on any manure,—the crops increasing about two bushels every year.

I shrewdly suspect there is no part of the world where

so many old fields lay out a dead tax to their owners, which with proper industry and tillage, would yield a profit. The foregoing is an experiment without manure, and yet the adjoining field tended at a much greater expense of manure, time and labor, did not yield so much. The different results show conclusively that the intrinsic value of land, is to be ascertained only by its being properly worked. Too many seek the West because they are too lazy to work; too indolent, even to think whether they may not improve their lands by manure, or their produce by some new mode of culture. I think the Atlantic States, should make their runaway children pay the penalty of ingratitude, in the shape of a tax on every negro, horse &c, and on every dollar they take out of them, to their impoverishment, and the aggrandisement of the West. Right or wrong, that is my opinion. I will probably trouble you again ere long.

Yours with respect.

EXPERIMENT.

Importance of Agriculture.

Charleston, Sept. 22d, 1838.

Mr. Editor,—I have just put down Addison's Journal of a tour to Damascus and Palmyra, and have risen from the perusal of it, more than ever convinced that Agriculture is of primary importance to every country under the sun, and that without surplus native productions, no country can have a lucrative commerce. The mere exchange of commodities, brought to this port for example, will enrich the immediate operators, and increase the aggregate wealth of the community, only to the extent of the balance of profit which our merchants may have made. To this amount only, are they producers, and contributors to the general stock, or capital of the country. But reverse the case, and suppose at the end of the year, a loss shall be found to have been made on this trade. The merchants, and the country, will be to that amount poorer than at the commencement of the year, notwithstanding the bustle at the Banks, the hum and stir of business on East Bay, and at the Rail Road Depository, and the fluttering of canvass upon every breeze that blows into, or

out of the harbor. A port may be so located as to command a vast commerce, but without a redundancy of internal productions, the country generally, can never be rich or prosperous. Labor must produce something, out of nothing, and give increased value to raw materials, by converting them into articles of convenience, or luxury; these are the duties of the "tiller of the earth," and of the workers "in iron, brass, &c." These classes in the ill governed, wretched East, are not guaranteed even personal safety, much less the enjoyment of the profit from their labor, and the consequence of this insecurity of both person and property, has been the decay and abandonment of magnificent cities, the impoverishment of the people en masse, the depopulation of entire districts, and the conversion of the garden of the world, into comparatively a howling waste. This is the effect of bad government. The resources of the country are not developed, because man and all that he has, belongs to his master the Sultan, or the Pasha. Here, we can sit under our own vine and fig tree if we have them, and enjoy all we possess, but how much more energy do we exhibit than the degraded, oppressed fellahs of the Turkish Empire? We are content with things as they are, suffering every day to provide for itself, living freely, and exhausting our lands, looking to the grave, or to the far West, as the refuge from poverty. Upon rice and cotton, we depend entirely as if there were no other productions, which will repay as well, the care bestowed on them. From the proceeds of these two articles we expect to defray all expenses, even to buy bread, and to grow rich; and if we do not; we flash up, and blame the Legislature, or Congress, or the Banks, in short any, and every thing, save our own want of economy, energy, and skill in following old pursuits, and our own total indifference to the production of new articles. A great change in the husbandry of a country, cannot be made in a season, but each season as it passes, can be made to leave us richer in the value, and number of articles produced for domestic use, or for market. A result so desirable every way, would be materially hastened by Legislative bounties, but with our local advantages, we can compete with any people in the world, and the fewness of our products, the great expense we constantly incur for the very necessaries of life, are fairly to be attributed to indolence; to want of enterprise,

and nothing else. Suppose we produced all the Wine and silk we consume, What would be the annual saving? *Not less* than $5,000,000, estimating our population to be no more than 500,000, and allowing no more than $10 to each individual; which, I insist is considerably below the truth. The Legislature will soon meet, and I think no exertion should be untried to obtain bounties on the production of silk, wine, corn, wheat, hay, wool, &c. &c. not forgetting *butter*. If nothing can be squeezed out of them, wish them safe journeys home in time for their Christmas dinners, and the acquirement of sound judgment before they meet again, to legislate for the "general good and common welfare." The "let alone principle" is good, but that of "help yourself" is quite as excellent, and I advise it to be chiefly relied on. Those who wish to profit by it, and set a praiseworthy example to others, should prepare for mulberry grounds and vineyards in the spring. The time is at hand when the cuttings should be set, and now, is the time to make suitable arrangements. I have seen a great deal in the newspapers and elsewhere, about the profits and management of the mulberry and the vine, but before reading Addison's tour to Damascus and Palmyra, I had not learned it was any where, the practice to cut down to the roots, both the mulberry and the vine annually. The reason assigned for doing so, is that while the cultivators thus obtain good fuel, the leaves of the mulberry are improved as food for the worms and gathered at less cost; and the grape if not improved, is not injured, and like the leaf of the mulberry, is gathered with more convenience. From the mode of cultivating the vine on single stakes, it would seem necessary to prune very freely, or cut it down to the ground, otherwise it would be difficult to gather the fruit from one, of two or three years growth. The mulberry spoken of, is the kind called the Brussa, and the plan of cutting down is certainly a good one, and quiets all apprehension of losing food for the worms, even in tolerably high latitudes. The leaves of the annual shoots are much more tender, and by setting numerous roots, a never failing supply of food can be secured, and from the pliability of the stems, the labor of stripping them, will be comparatively nothing. In addition to the advantage of furnishing light fuel, the cultivator can without extra expense, extend his mulberry grounds

at pleasure. Mr. Addison speaks of this practice as prevailing in a country laying in about the same latitude with Pennsylvania. It is fair to presume experience taught the people, cutting down, was the only sure means of preventing the destruction of the trees by frost. In this latitude, we have nothing to fear from from frost, but nevertheless it appears to me the advantages of cutting to the ground are so great, I think the plan ought to obtain here. I am inclined to think so, even of the vine in certain exposures, but it should be the subject of careful experiment. With regard to the mulberry, there can be no risk; we all know the growth is very rapid; and by suffering all the shoots to remain, the supply of leaves must be abundant.

Your humble servant,
J. B*** S*****.

Knowledge and Agriculture, the foundation of general prosperity.

Mr. Editor,—I have no objection to the discussion of the currency question, or any other that will amuse our dinner giving people, for 'tis but reasonable that those who pay the fiddler should dance; but I protest against this practice of minding other people's business to the neglect of our own. Hundreds are gotten together to hear what is best for the whole nation; to hear another scheme decried as the very worst possible; and they depart for their homes highly excited, believing if they do not obtain the boon which they are told, is good for the whole nation, irretrievable ruin will speedily overtake each individual. All this, depends on the hue and coloring, of the speech by the most popular or plausible speaker. If that were all we might be content to leave the issue to sober reflection, but presently we go into elections for the Legislature; the elections take the hue and coloring of the dinner speeches, and as a natural consequence, so do the proceedings of the Legislature. That body, like the dinner eaters, looks too much beyond the limits of the State, and concerns itself too much about legislation over which it has at most but very little influ-

ence, instead of first meriting greater weight in the council of the nation, by wise legislation at home. Show that we understand our own position; that we know how to profit from its advantages; that *we do* manage at home, wisely and well—and then, our opinion upon the currency question, and the general policy of the national government, will be worth something; not till then, for I am decidedly of opinion, a man who manages his own affairs badly, should not be the counsellor of him, who wishes to do well. This rule governs the conduct of every reflecting man, and in my opinion applies as well, to governments as to individuals. If Congress acts upon it, we must not be surprised. We want there, as elsewhere, practical men, who understand what they talk about—men who do not want leaders, but who can each and all, lead. To obtain such, we must school them at home, and we cannot begin too soon. *It is never too late to do well;* and as we are now about to elect a new Legislature, be it our duty, our policy, henceforth and forever, to consider Agriculture and Manufactures the *spinal marrow* and *backbone* of prosperity—the pathway to that weight in Congress which we claim. I am no tariff man, never was, and never will be, but I am nevertheless, an advocate for domestic manufactures—under State and individual patronage. The Legislature can do much, without infringing upon the constitution of the Union—the people can, and must do the rest. To this end, I invite the attention of the inhabitants generally, and their representatives particularly, to the following plain matters, which, duly appreciated and attended to, will insure our little State prosperity, wealth and greatness.

The Legislature should immediately establish an Agricultural Professorship, and order a very *critical Geological examination* of the whole State, from the spits and sand bars of the coast, to our interior boundaries. This is necessary to the early development, and proper employment of our resources, and we should never lose sight of the following facts:

Knowledge is the first cause of prosperity.

The second is, the capability of the soil to produce the necessaries and conveniences of life; not only in sufficient abundance for the inhabitants, but for exportation to our sister states and other countries.

The third is, employment of the people in working up all their native productions, to the last degree of excellence.

The fourth is, the conveniency of safe ports and harbors, to carry out their own goods (as much manufactured as possible) and bring in those of other countries as little manufactured, as the nature of mutual commerce will allow.

The fifth is, that the inhabitants should as much as possible, export and import their own goods, in vessels owned wholly in our own state.

The sixth is, a free trade with every country, except those which may be at war with our own.

The seventh is, being governed by laws well considered and justified to the true wants of the people, and never changed, but upon sound reason.

The eighth is, in improvement of the soil by manure and all possible means, encouragment of agriculture, and thereby increasing the number of inhabitants, without these, however blessed in regard to soil and climate, we never can be prosperous and rich.

The ninth is, by bestowing all offices of honor, profit, or trust upon *natives;* or at most with very few exceptions, where strangers have long resided among us, and are known to *understand and feel identified*, with our institutions, and interests as their own.

The tenth is, in avoiding unnecessary absenteeism, and spending at home the produce of our lands, and the profits of our various employments—instead of wasting our substance in senseless splash, and idle travel abroad; a sure sign, of the absence of proper love for one's own country, and people.

The eleventh is, equal taxation, and as light as possible, with a sound currency.

The twelfth is, a judicious system of roads and canals —and these should be free, if possible.

The thirteenth is, a tariff of bounties on all productions of the earth, and on manufactures, till they are placed beyond danger from competition.

The fourteenth, and root of the thirteen foregone, and a hundred other causes of prosperity is, a DISPOSITION in the people to produce all they want, to consume their own produce, wear their own manufactures, and to import no articles of luxury; but only such, as we cannot pro-

duce or manufacture, and cannot live comfortably without. These are but few, because most of the wants of man are artificial.

Now Mr. Editor, I humbly conceive our representatives would be much better employed in giving effect to a scheme founded on such considerations as I have submitted to you, than in constant tinkering at the laws, (without mending them much) chaffering about paltry local elections, and fuming about the proceedings in Congress—where they have no vote. Advise them, Mr. Editor, to set their own house in order—and then, they will have time and right to call Uncle Sam to account, and if it please them, to blaze away like great guns. No State in the Union does less toward bringing into play its resources, and so prevent migration of her people westward; and few, if even one so little. I am confident, there is not another so completely dependent, on other states and countries, as South-Carolina is this day. If I want a carpet broom, I can purchase it; but even that, is of foreign manufacture. It seems to me, the fault is mainly to be attributed to the supineness of the Legislature. The members seem never to have formed any projects of their own, but to have met, each expecting propositions from some one else. The consequence, is just what might be expected. Among other things omitted to be done, is the elevation of the character of our white mechanics. The method is obvious, and easy. It is to prohibit the instruction of slaves in the mechanic arts. White children must be friendless indeed, when they are found bonded apprentices, working side by side with, and degraded to a level with slaves, indented to the same trade, and probably both owning a common boss, or master. This thing won't do sir, and we shall not have ourn ative white mechanics, the enlightened respectable body they ought to be, till they have been taught as apprentices, to respect themselves. And that cannot be, till the legislature prevent all possibility of their being raised, or working with, slave apprentices. The contact is felt to be degrading, because they know it is so considered. If they grow up trifling fellows—should we be surprised? Assuredly not. The remedy can be applied by the legislature—let them see to it. I know it may be said, to be an interference with private right—but what of that? We are not to be told at this day, private right must some-

times yield to public good. If the legislature order a culprit to be scourged, branded, or even hanged, do not they interfere with private right? Certainly, and for public good. Upon the same principle they take life itself; they may surely direct in what pursuits slaves may, or may not be employed. Let them but elevate the moral character of our white mechanics, and they will call into action one of the hundred causes of the prosperity of a state, which I have not particularized. But I must stop. My love of Carolina, and my extreme anxiety to see her happy, prosperous, and truly great, have made me forgetful of your limited space, and already perhaps, I have trespassed upon it. With sentiments of high respect,

Your most obedient servant,
NECKAR.

Colleton, Sept. 24th, 1838.

Cause, and prevention of Fevers.

Sept. 28th, 1838.

Mr. Editor,—The many, and various observations made upon the change of climate, increase of sickness, and the annual abandonment of our plantations, you are no doubt as familiar with as I am. Time was, when people could remain on, and enjoy their estates all the year round, and with proper management I think we may in a few years do it again. A writer in your journal (I believe it was) some time ago, ascribed the comparative infrequency of freshets to clearing of the land, and justly in my opinion—but he overlooked a more important consequence, the effect upon the health of the country. I am of opinion, a little reflection will show the change of climate is identical, and has kept pace with, that in the surface of the earth. While in possession of the aborigines, our whole country was comparatively pure and healthy, and Dr. Rush states that so late as 1782, "some country people of Bedford County, Pa., traveled twenty miles to see whether it were possible for a German girl who labored under an intermittent, to be hot and cold at the same time." In former times, fevers were confined to the banks of rivers, creek and ponds, but the clearings

have opened just so many passages for swamp or marsh effluvia, and we find fevers prevailing in the interior, where they were formerly unknown. This will always be the consequence of clearing, without cultivating the ground. While opening the country, makes it sickly as I have already mentioned, *cultivation*, that is, draining swamps, destroying weeds, burning brush, and exhaling the superfluous moisture of the earth, by growing frequent crops of grain, and vegetables of all kinds, renders it healthy. There are other causes of sickness, which never can be entirely overcome, because man has no control over the seasons; the healthiness or unhealthiness of a country, depending much on the cold or heat, the dryness or wetness of particular periods. While rivers and creeks, are from uniformity of seasons confined to steady bounds, there will be little or no exhalation of febrile miasmata from their shores. But when swelled beyond their natural heights by a wet winter and spring, they fall, and leave a very extensive surface of ground completely saturated with water, exposed to the action of the sun, and of course to the generation of and exhalation of frebile miasmata. A country is always free from fevers during the overflow of its rivers—but subject to them after subsidence of the waters. It may be remarked that a wet season is often healthy in the low, while it is sickly in the hill country, and I think the reason obvious. In the former, the rains cover all the moist ground entirely, while in the latter, they fall only in a sufficient quantity, to produce those degrees of moisture which favor frebile exhalations. The rains which fall in summer, are rendered harmless only by covering the whole surface of the ground. Frequent, and heavy rains after the middle of September, are favorable to health, diluting, and thus destroying as they do, the frebile miasmata that were produced by the heat, and moisture of the preceding summer. Man can do but little towards preventing the evil effects of drought upon the health of a country, but he can do much to avoid, or mitigate that which results from excess of moisture; by good culture of the earth, and draining the low grounds. I beg leave to suggest a few hints for obviating and preventing fevers. For this purpose, I would recommend that all trees between settlements, and the quarters or points, from which the summer and autumnal winds blow be suffered to remain, and become as dense as possible, par-

ticularly if a river, creek, pond, or moist expanse of country be to windward of them. If the settlements have no forest defence, cultivate one of trees which will soonest attain their growth, and not too far from the house or settlement. The trees about each house, should not be so close as to prevent a due evaporation of redundant moisture from the ground. If a reservoir, or pond be near, allow the growth in it, and on its borders to continue, and if necessary set round it additional trees. Trees to leeward of rivers, creeks, and ponds, can never be too numerous, or thick. Around a pond they act in a small degree, mechanically. By sheltering it from the action of the sun, they lessen exhalation, as well as obstruct the passage of the vapors that are raised, to the adjacent parts. But trees act likewise chemically. It has been demonstrated that they absorb unhealthy air, and discharge it in a highly purified state, in the form of diphlogisticated air. The willow tree, has been proved to purify the air more rapidly than any other. The rapidity of its growth, its early verdure, and the late fall of its leaf, all seem to designate it, as highly proper for this purpose. A second method of preventing fevers, is to let the cultivation always keep pace with the clearing of our lands. Nature has in this instance connected our duty, interest, and health together. Let every spot covered with moisture, from which the wood has been cut, be carefully drained, and then ploughed and sowed with grass seed; let weeds of all kinds be destroyed, and let the waters be so directed as to prevent their stagnating in any part of their course. These are the two principal means of extirpating fevers from our counry, but as they are slow in their operation, I will suggest a few preventives, till the above remedies can take effect.

Whether the matter which produces fevers, be of an organic or inorganic nature, I do not pretend to determine; but it is certain that fire, or the smoke or heat from fire, destroys the effect of swamp or marsh miasmata upon the human body; from this cause, we find cities more healthy than country places, and commonly the centre of cities more healthy than their suburbs, in the sickly months. Where it can be done, I would advise large fires to be made every evening, between the spots from whence the exhalations are derived and the house, as near the latter as is safe, and not troublesome. This practice should be

continued till the appearance of two or three frosts, for frosts as well as heavy autumnal rains, never fail to put a stop to the progress of intermittents. During the sickly season, fires should be likewise kept in every room in the dwelling house, even when the heat of the weather makes it necessary to have the doors and windows open.

Let me advise all in sickly situations, to prefer woollen and cotton clothes, to linen in the summer and autumnal months. Great confidence may be placed in woollen and cotton clothes, in raw wet weather as preventives of fever, but most in woollen.

The diet in the sickly months should be generous. Wine and beer should be the drinks of this season, instead of spirits and water. Fruits and vegetables are not unwholesome, but as the season of the year produces langour and weakness, a larger quantity of animal food than usual, is best calculated to oppose fevers. Salted meat for this reason is preferable to fresh meat. Food of all kinds, eaten during the sickly months, should be well seasoned.

The evening air should be avoided as much as possible. Before breathing the morning air, the body should be fortified with a little solid aliment, or a glass of bitters. These bitters should be made of centaury, wormwood, camomile, or the bark of the willow or dogwood tree, infused in water. Bitters made with spirits, or even wine, cannot be taken in a sufficient quantity to do service, without producing intoxication, or the deadly habit of loving and drinking spirituous liquors.

The person should be bathed or washed frequently, and those who have not access to the sea, will find that adding salt to water, renders it powerful in preventing diseases. Preserve cleanliness in every species of apparel. Offal matters, should be removed from the neighborhood of dwellings. The excrements of domestic animals may be excepted, for nature has kindly prevented any inconvenience from them. More than this, she has endowed their dung with a power of destroying the effects of swamp, or marsh exhalations, and of preventing fevers. The cottagers of Europe who live under the same roof, and even under the same roof with their cattle, are almost always healthy. These counselings, are founded on practice and observation.

Yours respectfully,
A PATRON.

PART II.

SELECTIONS.

Soil.

[FROM THE NEW-ENGLAND FARMER.]

(Concluded from page 473.)

Loams are the most desirable of all soils to occupy. They are friable; can in general be cultivated at almost any season of the year; are ploughed with greater facility and less strength than clay; bear better the vicissitudes of the seasons; and seldom require any change in the rotation adopted. Above all, they are peculiarly well adapted for the convertible husbandry: for they can be altered not only without injury, but generally with benefit, from grass to tillage, and from tillage to grass. They should not however, be kept in tillage too long nor while they are in cultivation, should two white crops be taken in succession.

Loams are of four sorts; 1. Sandy; 2.Gravelly; 3. Clayey; and, 4. Peaty.

1. A sandy soil and a sandy loam, are easily distinguished. A sandy soil is always loose and crumbling, and never gets into a clod, even in the driest wheather; whereas a sandy loam, owing to the clay that is mixed with it retains a degree of adhesion or cloddiness, after wetness or drought and will not suddenly crumble down, with the application of machinery for that purpose.

A mellow, rich, crumbling sandy loam, adhesive enough to fear no drought, and friable enough to strain off superfluous moisture, if incumbent on a sound subsoil, is the most profitable of all soils, being managed with much less expense than any other soil, and raising with advantage, every species of crop that the climate will admit of.

2. Gravelly loams, when warm, sound and dry, or free from springs, are useful soils, more especially in wet seasons and climates.

3. A clayey or stiff loam, is nearly allied to brick earth. Though the soil might have originally been poor, cold, and hungry, yet if it be well drained, according to the Essex system, and highly manured, it will yield great crops. It is found well adapted for the dairy in Cheshire.

4. Peat, in some of its varieties, may likewise be converted by culture, into a species of black soft loam, and, in that state, it becomes highly fertile and productive.

Loams will produce hemp and flax, in the greatest perfection and abundance, besides the other crops usually cultivated in this country;

and in rich loams, where the substance is both dry and open, lucerne might be more generally grown than it is, in preference to other grasses.

Before the subject of soils is dismissed, there are some miscellaneous particulars which merit attention; as, 1. The means of ascertaining their composition; 2. The nature of mould so essential for their fertility; 3. Their color; 4. The importance of cultivating good soils; and, 5. The general principles on which their improvement may be effected.

1. That the most efficient methods for improving soils may be adopted, it is necessary that their composition should be known. A distinguished philosopher has suggested a plan for that purpose, which can easily be carried into effect, by any person at all conversant in chemical researches. But the generality of farmers have not the means of entering into such researches; yet they are able, by observation and experience, to discover the most important deficiencies of the soil they cultivate. This may be effected, by comparing their own soils with each other, and with the most fertile in their immediate neighborhood. The great object they ought to keep in view is, to render a soil capable of receiving and retaining such a due quantity of moisture, as may be sufficient to nourish the vegetables that grow in it, and to absorb or throw off, that superfluous water which would prove injurious.

2. Mould, which contains a mixture of animal and vegetable remains, particularly from putrefaction, is an essential ingredient in all fertile soils. It arrises from the decomposition of the roots and leaves of vegetables on grass land, and the stubble and roots of grain crops on arable. This process on grass lands is very slow; for it is calculated that it proceeds at the rate of only one inch in a century. Considerable accumulations of this mould, are likewise produced from the leaves of trees, amassed for a number of years, and rotted on the surface. When in addition to vegetable, there are animal remains in a state of decomposition, the soil is distinguished for its fertility.

3. It is of essential consequence, when the surface is bare and exposed to the rays of the sun, that the color of the soil should be such as to attract and absorb the greatest heat from the sun and the atmosphere, more especially in spring.

Soils are of various colors; the principal are white, black, and red.

White stiff clays are heated with difficulty, and being usually very moist, they retain their heat only for a short time.

A black soil, containing much vegetable matter is most easily heated by the sun and air. Its temperature has increased from 65 to 88° by exposure to sunshine for an hour. A chalky soil, under the same circumstances, was heated only to 69°. In the shade, however, the black mould lost its heat more rapidly.

The red color in soils, is owing to iron in various combinations. It is favorable or adverse to fertility, according to the nature of the combination. That which approaches nearest to the metalic state, is considered by some the most favorable.

4. It has been justly remarked, that too much can hardly be paid for a good soil, and that even a low rent will not make a poor one profitable. The labor of cultivating a rich and a poor soil, is nearly the same; while the latter requires more manure, and consequently is more expensive.—Poor soils, at the same time, may have such a

command of lasting manures, or even of temporary sorts, like seaweed, as may render them profitable to cultivate.

5. There are various modes of improving soils.

Soils with acids or salts of iron, may be ameliorated by the appliion of lime, or chalk. The sulphate of iron is thus converted into a manure.

If there be an excess of calcareous matter in the soil, as in chalky soils, it may be improved by the application of sand, or clay, or earthy substances.

Soils too abundant in sand, are benefited by the use of clay, or marl, or vegetable matter.

A deficiency of vegetable or animal matter must be supplied by manure.

An excess of vegetable matter is to be removed by burning, or to be remedied by the application of earthy materials. The substances necessary for improving soils, are seldom far distant. Coarse sand is often found immediately upon chalk, and perhaps always under it, while beds of sand and gravel are commonly below clay, and clay and marl generally below sand.

The labor and expense of improving the testure or constitution of the soil, it has been justly observed, are amply repaid by the great permanent advantages they produce. Less manure is afterwards required, the future fertility of the soil is ensured, and capital, thus, expended, secures forever the productiveness, and consequently the value of the land.

Perpetual Fertility of Certain Soils.

[FROM THE FARMERS' REGISTER.]

The following extract is taken from an interesting and scientific work, entitled "Travels through the Western Country, in the summer of 1816, by David Thomas."

The fertility of the sandy praries near the [Wabash] river is very remarkable. If lime is a constituent of this soil, the portion must be inconsiderable, as acids produce no effervescence. Neither is the vegetable matter in much quantity. The finer parts diminish but little in the fire, and are changed from a black to a reddish brown. Hence the fertilizing principle is a mineral earth.

"The idea of soils *perpetually fertile* was not original with H. Davy, though to him we owe the first scientific view of the subject. Vegetable matter soon dissipates; but the primitive earths are imperishable; and if my conjecture is correct, these praries will be sources of abundance through distant ages. A field was pointed out to me, which had recently been enclosed from the commons of Vincennes, and which produced corn of extraordinary luxuriance. From the nakedness of this ground it is evident, that a vegetable soil would soon become steril.

"One of my correspondents remarks, 'we have a prairie below this place, which has been in cultivation for seventy or eighty years, and now produces well.'

"Lord Kaims mentions a field near the Clyde in Scotland, which had annually produced a crop for 101 years, and still retained its fertility. The subjoined extract is from the 'Edinburgh Encyclopædia.'

'The lands of St. Iago, (Chili) though constantly cultivated for two centuries and a half, without receiving any artificial manure, have suffered no diminution in their amazing produce.'

"Some of the great bottom of the Mississippi, between Kaskaskia and Illinois 'has been in cultivation 120 years, and still no deterioration has yet manifested itself.'"

I have made the above quotation for the purpose of adducing a few instances of almost equal fertility, presented by some of the soils of Eastern Virginia, apparently of very diverse constitutions. In none of them, as far as I am aware, has any portion of lime been detected. That the presence of lime gives fertility and durability to soils is fully demonstrated by all practical and scientific writers on agriculture; but that equal durability should characterize other soils, of which lime [in its usual state of *carbonate*] forms no constituent portion, can only be accounted for on the supposition of the existence of neutral soils, as promulgated by the author of the "Eassay on Calcareous Manures."

There is probably no soil in Eastern Virginia, nor indeed in any part of the state, which is superior to the best of the furruginous lands in the vicinity of Beaverdam, Goochland. It is an alumnious mould in which the clay forms so great a proportion, that in times of rain it is as adhesive as mortar; though in a dry state, the surface is light and puffy. It is so red, that the line between the soil and subsoil is not always obvious. The neighborhood was settled about the year 1712; consequently much of the land has been in cultivation for upwards of a century. When it is considered that the system of agriculture, which has prevailed, has been one of continual cropping—that heavy drafts have been yearly made upon the soil without its having received any aid from ameliorating crops, or artificial manures—and when it is moreover known that these lands remain to this day highly productive, it must be admitted that they merit the title of being almost "perpetually fertile." The farm of the late Geo. Pleasants may be cited to illustrate the truth of what I have stated. In the worst seasons, it never fails to produce a fair crop; and in years of plenty, it is now capable of yielding twenty bushels of wheat to the acre. Under an improved system, and possessing, as has been evidenced by the effects of one or two partial crops of clover, the greatest recuperative powers, it is expected that the present proprietor, who has inherited this valuable patrimony, will soon advance its condition to that state of productiveness of which it so susceptible.

There are some portions, however, of the Beaverdam lands, that are rendered almost steril by a superabundance of isinglass or micaceous earth. This ingredient not only destroys their adhesion, but prevents any permanent improvement from being effected, even by the most liberal use of manures. In twelve months, they become again as barren as they were at first.

A short distance above Richmond are to be seen some specimens of fine granite soils, on the boundaries of the bituminous coal field. On the farms of Thos. M. Randolph and John Wickham, near Tuckahoe creek, where the granite rock, which forms the bed of the coal measures, appears in large quantities, the soil is much more fertile and durable than it is either to the east or west of the granite line. Many years' cultivation. under the usual system, has not impaired its original freshness and vigor. I can only ascribe its superiority over the contiguous cold and heavy lands, to the gradual addition of granite by

disintegration; thus constituting a soil in which silicious matter was originally deficient. How far this modification of its texture has been beneficial in other portions of the same range, I have not had the means of judging.

The granite soils which constitute the dividing line between the tertiary and secondary formations of the state, have been represented, and very truly, as being exceedingly barren. If there be no exception to their general character in Virginia, there is, however, a most conspicuous one in the neighboring state of Maryland. The tract of country known by the name of *Elk Ridge*, on the Patapsco river near Baltimore, and which exhibits a soil composed in a great measure of disintegrated granite, is the admiration of all travellers who have seen it. There is perhaps no district east of the mountains which possesses greater natural fertility; nor is there any, where the effects of judicious cultivation are more agreeable exemplified. In approaching tide-water, the character of the soil undergoes a gradual change in proportion to the quantity of decomposed granite.

The low grounds lying on the margin of James River, which are too well known to require any description, may be adduced as an instance of the extreme durability of soils, scarcely less imperishable than the black praries of Indiana. Though they now exhibit the benefits of good culture in a remarkable degree, even under the severe presure of the four-shift system; yet the most exhausting tillage to which they were formerly subjected, had effected but little deterioration in their fertility; and indeed some portions of them have never been sufficiently reduced by a long course of corn and tobacco, to yield a crop of wheat that will not lodge before harvest. Their extraordinary productiveness is no doubt chiefly to be ascribed to their alluvial formation, combined with accumulation of mineral earths which they have received from the mountains through a long course of ages.

The whole of these flats is believed to be now under culture for a considerable distance above Richmond. If there be any remains of the original forest, it is not within my knowledge; but I have a distinct recollection of some portions of it, before it had been despoiled of its glory. Such sylvan magnificence is perhaps no where to be seen in Eastern Virginia at this day; and even the bottoms of the Missouri have seldom exhibited specimens of more towering height and gigantic proportions.

T. S. P.

Organization and Functions of Animals and Vegetables compared.

[From the Quarterly Journal of Agriculture.]

It is a very important preliminary to the study for which I would gain the attention of practical men, that they understand the nature of plants; of those organic creatures whose diseases they would obviate; for an ignorance of, or an inattention to this, is one of the causes that so little progress has been made in this branch of natural philosophy. It is absolutely necessary and important for them to understand fully that this part of the creation, the very grass they trample upon, is so highly organized, so exhibiting intimations of the functions more highly developed in the superior animals, that it is not

possible to point out where animal life terminates, and where vegetable life begins; the zoophyte connects the two kingdoms. It is absolutely necessary, I think, for this to be understood and felt by those who enter upon the investigation of vegetable diseases, because I have a strong opinion that these in many, very many instances, are caused by the plants which they infect being treated as if they were totally insensible, inorganic matters, scarcely more susceptible of injury at some periods of their growth than the soil from whence they partly derive their sustenance.

To determine the question whether plants possess a degree of sensation, is not so easy as many persons may believe. "It is as difficult," says Mr. Tupper, who has written ably upon the subject, "to ascertain the nature of vegetable existence, as to determine what constitutes the living principle in animals." Darwin by the aid of imaginary beings similar to the Dryads and Harmadryads of the classic mythology, has raised plants to a position in the order of nature superior to that to which animals are entitled. Other philosophers, taking a totally antagonist opinion, estimate vegetables as bodies, only somewhat more organized than crystals, but like these entirely and exclusively subject to chemical and mechanical changes.

The above opinions are equally erroneous, as will appear from the facts arranged in the following pages. It might easily be made to appear that the gradation from reason to instinct, from instinct to inanimation, is as gradual as the transitions of light from the noon-tide to the midnight of a summer's day; but this essay must be confined to that section of creation that commences from the close of the animal classes in the zoophyte, and terminates where inorganic matter commences in the crystal; and its details must be specially directed to demonstrate how closely it approaches, how indistinctly it is divided from the former.

Let us first consider the comparative composition of animals and plants demonstrated by the researches of chemists. Their constituents are identical: carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus; acids, alkalies, earths, and metals, are the common components of both. Nitrogen has been considered by some chemists as the constituent, marking by its presence animal from vegetable matters, but the distinction fails in as much as that from some animal matters it is absent; whilst in the gluten of plants, a chief constituent of wheat, and in the whole frame of the tobacco, it is present.

If we follow the above chemical bodies through their combinations, we shall find that these in animals and plants are closely similar; and in both are equally numerous and intricate.

Of the acids there are contained in

Animals.	*Vegetables.*
1. Sulphuric,	1. Sulphuric,
2. Phosphoric,	2. Phosphoric,
3. Muriatic,	3. Muriatic,
4. Carbonic,	4. Carbonic,
5. Benzoic,	5. Benzoic,
6. Oxalic,	6. Oxalic,
7. Acetic,	7. Acetic,
8. Malic,	8. Malic,

and others equally numerous in each, but not common to both. Of the earths and alkalies, lime, magnesia, silica, soda, and potass, are

found in each class. Of the metals, iron and manganese are their conjoint constituents.

If we follow the two classes their more compound constitutes, we will find the analogy still holds: they contain common sugar, mucus jelly, coloring, and other principles, gluten,* fibrin, oils, resins, and extractives. The functions of animals and plans, are similarly closely analogous.

Animals take in their food by the agency of the mouth, and prepare it for digestion by various degrees of mastication, or attrition, as in the gizzard of birds. In this they differ from plants, but these have this compensation, they imbibe their food in a liquid form, and consequently in a state of the finest possible division. Animal and vegetable remains are their common food, plants having this superiority over animals, that, as they only absorb the soluble and finer parts, they are not obliged to throw off the grosser constituents which appear in the excrement of animals.† In the animal stomach the food undergoes an extensive change, being altered entirely both in taste and smell. In the lymphatics of plants, which may be considered their primary organ of digestion, their food, or lymph, undergoes a change precisely similar; its color and flavor are altered, and its specific gravity increased.

From the stomach, the animal's food pases into the intestines, is there subjected to the action of the bile, and converted into chyle, the nutritive part, and excrementitious matter. In their passage through the intestines, the chyle is absorbed by the lacteal vessels, and is conveyed into the blood; by the heart, the mingled fluids are propelled, into the lungs, to be there exposed to the action of the air. The vital fluid there changes its purple hue for a florid red, looses a portion of its watery particles and carbon; the latter combining with the oxygen of the atmospheric air in the lungs, and being breathed forth in the form of carbonic acid gas. As plants in their food take in no gross, unnecessary ingredients, it is obvious that no process like the biliary operation of digestion is required. The lymph, or sap, proceeding at once along the branches, is poured into the leaves, the very lungs of plants. There, as in the blood, its color is changed, oxygen is emitted from it during the light hours of the day; but carbonic acid gas is thrown off during the night, and at all periods a considerable quantity of water.

From the lungs, by the agency of the heart, the blood is propelled through the arteries over the whole animal system, supplying nourishment and warmth to all the parts, and where, by these abstractions it is again converted into purple or venous blood, it is returned by the veins to undergo the charges that were described as being effected by the lungs.

The sap, after exposure to the action of the air in the leaves, is returned by another set of vessels situated in the bark, ministering to the growth and support of the whole plant.

Such is the close assimilarity in the digestive and circulatory processes of the two classes; an assimilarity which obtains in all the other functions enjoyed by them in common. In respiration, the air

* The gluten of plants is the albumen of animals.

†Is not the excretion from the roots of plants, as proved to exist by M. De Candolle, somewhat analogous to the excrementitious matter of animals?—EDITOR.

inhaled through the mouth and nostrils proceeds immediately to the lungs and acts upon the blood; in plants, when it is inhaled by their leaves, it operates instantaneously upon the sap. The changes that take place have just been imperfectly noticed; but it is necessary to add, that the oxygen of the atmosphere, is the gas essential to the existence of animals; but it is its carbonic acid that is nearly as important to vegetables. They may be considered the vital airs of the two classes. If animals are placed in a situation where they inhale pure oxygen, their functions are highly and rapidly increased; but it is an exhilaration and death, if breathed by them for any extended period. So plants will flourish in an atmosphere containing 1-12th of carbonic acid, but if it much exceeds this proportion, they are rapidly destroyed. During sleep animals expire less carbonic acid than during their waking hours; so plants emit little or no oxygen during the night.

After an animal has enjoyed the regular course of its functions for a period varying in its duration, the time at length arrives when decay commences. The wasted, enfeebled, and relaxed form gradually declines, until death finally closes all activity. The body then becomes contracted and rigid: the skin exchanges the ruddy tinge of health for death's pallid hue. Decomposition speedily ensues, with all its offensive phenomena; and finally the only permanent remains are the skeleton and a small amount of earthy matter. The same characteristics attend the last period of vegetable existence. Plants may flourish only for one season, or their lives may be extended through centuries of years, yet decay eventually comes over them; becoming more and more stunted, weak, pallid, and ragged, they eventually cease to live, become contracted and rigid, and pass through the same phrases of putrefaction that are exhibited by the animal carcass. In both there was a time when warmth and exposure to the atmosphere were the sources of vigor, they now become the agents of destruction; they were once able to resist and to overcome the laws of chemical affinity, they now are destroyed by their attacks. What causes this most striking change? What antiseptic agent have they lost? There can be but one reply. It was their vitality. Now, let us examine how the vitality of plants in other respects resembles the vitality of animals, and I will confine this examination to two or three points.

Plants are *excitable*. Light acts upon them as a stimulus. Every body must have observed that plants bend towards the direction from whence its brightest influence proceeds. M. Bonnet, the French botanist, demonstrated this in some very satisfactory experiments, by which he showed that plants grown in a dark cellar, all extended themselves towards a small orifice admitting a few rays of light. Every flower almost has a particular degree of light requisite for its full expansion. The blossoms of the pea, and of other papilionaceous plants, spread out their wings in fine weather, to admit the solar rays, and again close them at the approach of night. Plants requiring a powerful stimulus, do not expand their flowers until noon, whilst some would be destroyed if compelled to open in the meridian sun,—the night-blooming *Cereus* unfolds its flowers only at night. Heat also acts as a stimulous upon plants. M. Duhamel observed, that during moderately fine weather the footstalk of a leaf of the sensative plant *(mimosa pudica)* stood in the morning at an angle with the lower part of the stem of 100°; at noon the angle had increased to 112°, but at night

had fallen to 90°. If a leaflet of this plant be but slightly touched, it immediately shrinks away; and the impulse being communicated, each pair of leaflets on the branch colapse in succession; and if the impulse be strong, the very branch itself will sink down by the side of the stem. If an insect alight upon the upper surface of the Venus's fly-trap, *(dionœamuscipula,)* its sides spasmodically approach each other, and crush to death the intruder. If the inner side, near the base, of any one of the anthers of the barberry, *(berberis vulgaris)* be gently touched, as with a bristle or feather, it instantly springs forward and strikes against the stigma. But the strongest indication, says Mr. Keith, of the existence of a species of sensitive principle in a plant, is, perhaps, that which is exhibited by the *hedysarum gyrans*. It is a native of India, growing on the banks of the Ganges. Its leaves are turnate, the middle leaflet being larger that the latteral ones. All of them are in constant vibratory motion; sometimes equably, at other times ebruptly, but without any unison in the movements. If their motion be prevented, by grasping them in the hand, they renew it more vigorously when the confinement is removed, but by degrees subside to their natural rapidity of motion. This motion does not depend upon the application of any external stimulus, for it continues throughout the night as well as the day. It is most active during a warm fine day, the leaves then having an additional tremulous motion. *(Keith's System of Physiological Botany*, ii. 464.)

Instinct seem to be a characteristic of plants, from the following phenomena. Some of them close their flowers invariably when rain is approaching. Others have an unalterable direction assumed by them when climbing. No force can make one twist around a pole from left to right, if its natural direction be from right to left. If a garden pot be divided by a vertical partition, and one-half filled with a poor sterile earth, and the other moiety filled with a rich fertile soil, a geranium, or other plant placed in this pot, with some of its roots over the sterile soil and the rest of the roots over the fertile soil, those over the first named portion will gradually change their direction until they can also get into the richer pasturage. Instances have been known of the roots of trees piercing and destroying walls in their efforts to attain a more preferable soil than that in which they were planted. M. Saussure relates, that he placed some plants of *polygonum persicaria* and *bidens cannabina*, in water containing acetate of lime in solution. These plants then imbibed with the water a portion of this salt; but when they had the opportunity of selection given them, by dissolving in the water some common salt, glauber salt, and acetate of lime, they absorbed the two first named, but rejected the latter entirely. *(Saussure's Recherches.* 247-261.)

From the foregoing facts, without arguing that they demonstrate sensation to exist in plants as acute as that possessed by the higher or more perfect classes of animals, yet they certainly are satisfactory evidence that plants probably are nearly as sentient as the zoophyte, or even as the polypus and the hirudo,—animals that may be cut into pieces, and each section become a perfect individual,—animals whose heads may be taken off and grafted upon other bodies,—animals that may be turned with their outsides inwards, and yet without any apparent inconvenience. If plants be endowed with sensation of the most limited degree, it explains the cause, throws light upon the prevention of many diseases that affect those which are the object of cultivation, warns the tiller of the soils from the late performance of many of his operations, and teaches him generally to be less violent

in his field practice. If a grape vine be pruned too late in the spring, the bleeding, or effusion of sap, has been known to be so violent, that the tree has died from absolute exhaustion. Stone fruits, if severely wounded, are frequently destroyed by the inroads of a disease resembling in all its characteristics the cancerous affections of animals; and I have known a whole crop of wheat affected with the swelling of the stem or culm, evidently caused by an extravasation of the sap from its ruptured internal vessels, owing to the roller being passed over the crop when of a growth somewhat too forward.

Age and Size of Trees.

[FROM THE AMERICAN ALMANAC FOR 1838.]

There is a great difference in the age that may be attained by different kinds of trees. Some continue to flourish through a long series of ages; nor can any definite time be assigned to them as the natural period of their existence. There are individual trees whose age, as computed by some naturalists, would carry back the commencement of their existence to a period anterior to the deluge; and though we have no very satisfactory evidence that there are any trees now existing of so great an age; yet there is no physical impossibility that such may be the fact.

The age of many kinds of trees may be ascertained, with some degree of accuracy, by felling them and counting the number of the concentric circles or rings of their stem or trunk. The age of trees is also estimated, while they are standing, by their size, appearance, and a knowledge of the laws by which their growth is regulated; and there are some old and celebrated trees, the age of which is known, with some degree of accuracy, by historical documents. There are, however but very few of the most remarkable vetrans of the forest or the field, of which the ages can be ascertained with any precision.

We can notice briefly only a few of the most remarkable trees. For further information, we would refer to the writings of Michaux and De Candolle, the volume on Timber Trees, in "The Library of Entertaining Knowledge," "The Penny Cyclopædia," and "Gentleman's Magazine," for June 1836. The facts in this paper have been derived from these sources and from other works to which reference is made.

1. "The *oaks* are among the patriarchs of Europe." In America there are no less than 29 varieties of the oak enumerated by Michaux. The white oak of the American forest is a much taller tree than the British oak; though its timber is not so hard nor so durable. "It is," says Michaux, "70 or 80 feet high, and 6 or 7 feet in diameter; but its proportions vary with the soil and climate."

The *Wallace oak*, at Ellerslie, in Scotland, 3 miles from Paisley, was a remarkable object at the beginning of the 14th century, and must be at least 700 years old. Its branches are said to have covered a Scotch acre of ground. Many cases of oaks of extreme old age are recorded, some of which have been estimated at 1,500 or 1,600 years. The largest oak known in England, was called Damory's, in Dorsetshire, and was 68 feet in circumference. It was destroyed in 1755. The largest oaks now growing in England, are two near Cranborn Lodge, Windsor; one 38, the other 36 feet round.

There has recently been published in the newspapers a notice of an oak at Ashton, England, said to be the finest in the country, which had been lately sold for 60 guineas, and was expected to be cut down when the barking season for the year (1837) should arrive. The circumference of its trunk, 6 feet above the ground, is stated at 20 feet; the length 72; the circumference at this height being 2 feet. About 30 years since it was sold for £100; but a chancery suit then arose, which saved it from the axe.

In Samagitia, Poland, 30 miles from Kowno, there was a famous oak, which was cut down in 1812. It was 38½ French feet in circumference, and 14 in diameter. "When sawed through, its age was clearly discernable, and found to be almost 600 years."—*Bib. Univ. Aug.* 1831.

Mr. Welles, in a communication in "The New England Farmer," states that in a lot in Dorchester, [Mass.,] given by Governor Stoughton, for the benefit of college education to Dorchester scholars, he measured several oaks which were from 18 to 20 feet in circumference; and in one of them he counted 200 rings, indicating as many years.

The writer of an article on "American Forest Trees," in "The North American Review," for April, 1837, says:—"The largest oak and indeed the largest tree which we have seen in this country, is a white oak, on the estate of James Wadsworth, Esq., of Genesee, N. Y. The tree is from 24 to 27 feet in circumference at the smallest part of the trunk. Its age cannot be less than 500 years, and it must, therefore, have been a majestic tree at the time when Columbus discovered the western world. It appears to be still in a healthy and vigorous condition, and bears in its exterior no marks whatever of decay. It is by no means improbable that this tree exceeds in size many both in Europe and elsewhere, which are recorded as of greater diameter. For in the measurement of large trees, it is of great importance to ascertain at what part of the trunk the measurement was taken. Every one must have remarked the difference between the bulk of such trees at the surface of the ground, and at a few feet above."

2. The *yew* attains a great age. The famous *Ankerwyke yew*, near Staines, in England, is older than the meeting of the English barons at Runnymede, when they compelled King John to grant Magna Charta. It is 9¼ feet in diameter. The yews at Fountains Abby, in Yorkshire, are estimated at more than 1,200 years old; and some at Fotheringay, in Scotland, have been computed at 2,500 or 2,600 years. One at Fortingal, in Pertshire, is said to be 56½ in circumference; one at Brabourn in Kent, nearly 20 feet in diameter; and one at Hedsor, in Bucks, 27 feet in diameter.

3. The *lime* is said to acquire a larger diameter, in a given time, than any other European tree. There is one at Friburg, in Switzerland, which was planted in 1476, on the occasion of the battle of Morat; and it now has a diameter of 13 feet and 9 inches.

A lime at Trons, in the Grisons, which was a celebrated plant in 1424, existed in 1798, when it measred 51 feet in circumference. Its age is computed by De Candolle at 583 years.

4. The *elm*, both of Europe and America, is a large tree, and has a rapid growth; but the American elm has a more majestic appearance than that of Europe. The former is represented by Michaux as much inferior to the latter for useful purposes; yet he characterizes the American elm as "the most magnificent vegetable of the temperate zone." One which grew at Morges, in Pays de Vaud, is

mentioned by De Candolle, which he estimated at 335 years old; and its trunk was 17 feet 7 inches in diameter—(the foot of Pays de Vaud.) Mr. Strutt mentions an elm of 30 feet in circumference planted in the reign of Stephen; and one near Powick Bridge, Worcestershire, is 25 feet round. The largest elm of Scotch growth, now nearly destroyed, in Teviotdale, near Roxburgh, measured in 1796, 30 feet in girth.

The elm on Boston common is very conspicuous, both on account of its situation and size: and it is a very beautiful and well proportioned object. According to the statement of Mr. Welles, in "The New England Farmer," "it measures, near the ground, 23 feet, and about 3 feet above, 20 feet in circumference." Mr. Welles mentions, that "a publication states the measurement of an elm at Hatfield, Mass., as 34 feet in circumference, at 2 feet from the ground, and 24 feet 8 inches above, with a supposition that it is the largest tree in New England. But "The Gazette" of Northampton states that there are several elms which would compete with it in that place, measuring 21, 22, and even 25 feet, and that one is said to measure 28 feet at some distance from the ground."—*N. E. Farmer.*

5. Some *cedars* on Lebanon, measured in 1660 by Maundrell and Pococke, were found to be 36½ feet in circumference; and were computed to be then 609 years old, and about 800 years old in 1787, when seen by M. Labellordiere.

6. In the garden of Olives at Jerusalem, there are now existing eight *olives*, which can be proved by historical documents to have existed anterior to the taking of Jerusalem by the Turks; and consequently must be at least 800 years old.

7. "In the island of Teneriffe, there is a *dragonier*, or *dracæna draco*, which is reputed to have lived a thousand years, and is called the *great dragon*. In 1402, when the island was conquered by Bethancourt, it was as large and as hollow as it now is. Humboldt measured it in 1799, and found it to be 45 French feet in circumference a little above its root. This tree is called dragon's-blood, because there flows from its trunk during the dog-days, a liquor of a deep red, like blood, which is soon condensed, and becomes dry and brittle. It is the true dragon's blood of the shops." *Nouv. Dict. d'Hist. Nat.* This famous tree, which has been frequently visited by travellers, was destroyed by a storm in 1822.

8. The *banian* or *burr tree*, (the *ficus indica*) is one of the most curious and beautiful productions of nature. Each tree is in itself a grove, being composed of numerous stems or trunks which are connected together; some of the stems being the size of a large tree. A celebrated banian, called the cubbear bur, stands on an island in the Nerbuddah, near Baroach in Hindostan. It is said by the natives to be 3,000 years old. It is described by Milton in his "Paradise Lost;" and it is supposed by some to be the same that was visited by Nearchus, an officer of Alexander. The large trunks of this tree amount to 350, and the smaller ones exceed 3,000; and each of these is constantly sending forth branches and hanging roots to form other trunks. The circumference of the whole is nearly 2,000 feet.—*Clarke, Penny Mag.*

9. There are three celebrated *sweet-chestnuts*, on the side of Mount Etna, called *de' sento cavilli*, 180 feet in circumference at the bottom of the trunk; *di aontha agatha*, 70 feet; and *della nave*, 64 feet in circumference. They must be of high antiquity; but nothing precise is

known on this point; and it is almost certain that the first mentioned has been, in reality, formed of five or six trunks grown together. According to Brydone and Glover, this chestnut is 204 feet in circumference.

The Tortwith chestnut belonging to Lord Ducie, in Gloucestershire, England, has been computed to be 900 years old. It measures 50 feet in circumference 5 feet from the ground; and the height of the main stem is 70 feet.

10. The *baobab* of Africa, considered by Humboldt, "the oldest organic monument of our planet," is estimated by Adanson at the extraordinary age of 5,150 years; and, if this is not an over-estimate, it must have been a tree of considerable age at the time of the deluge! The method adopted by Adanson for ascertaining the age of the baobab, was by making a deep cut in the side of the trunk and counting the concentric rings, and thereby ascertaining the proportion between the number and the part of the diameter examined and the whole diameter. But this method cannot insure an accurate computation. The enormous dimensions of its trunk bear a striking disproportion to the other parts. It is not uncommon to find a trunk not more than 12 or 15 feet from the root to the branches, with circumference of 75 to 78 feet. Humboldt mentions baobabs having a diameter of 30 feet. The size of the flowers is said to be in proportion to the size of the tree.

11. Some *cypresses* that were celebrated even in the time of the Moorish kings, existed in the palace garden of Granada, in 1776, and were supposed to be at least 800 or 900 years old. In America, according to Michaux, the largest stocks of the cypress are 120 feet in height, and from 25 to 40 feet in circumference, above the conical base, which at the surface of the earth, is always three or four times as large as the continued diameter of the trunk. Strabo mentions a cypress in Persia, in girth as much as five men could span; and he believed it to be as much as 2,500 years old. At Atlexo there is a cypress 76 feet in circumference; and one at St. Maria del Tuli, 118 feet round. The deciduous cypress of Chapultepec in Mexico, said to be 117 feet 10 inches in circumference, the younger De Candolle considers even older than the baobab tree above noticed.

12. The *plane tree* (the *platanus orientalis* of the eastern continent, and the *platanus occidentalis* of America) commonly known in the Eastern States by the name of the *button wood*, and in the Western States by that of the *sycamore*, is celebrated in both continents for size and majestic appearance; but the American species is said to possess a richer foliage, and afford a deeper shade than the Asiatic.

There is now growing in the valley of Bujukdere, near Constantinople, an immense oriental plane, 150 feet in circumference, with an internal cavity of 80 feet. Pliny mentions a plane tree in Lycia, which had a hollow trunk, that afforded a retreat for the night to the Roman consul Licinius Mutianus, with 18 persons of his retinue. This interior grotto was 75 feet in circumstance, and the summit of the true resembled a small forest.

"The *sycamore (platanus occidentalis)*," says Mr. Flint, in his "Geography of the Mississippi Valley," "is the king of the western forests. It flourishes alike in every part of the valley that we have seen. It is the largest tree of our woods, and rises in the most graceful forms, with vast spreading lateral branches, covered with bark of a brilliant white. A tree of this kind near Marietta, (Ohio,) measured

15½ feet in diameter. We have seen one on the Big Miami, which we thought still larger. Judge Tucker, of Missouri, cut off a section of a hollow trunk of a sycamore, and applied a roof to it, and fitted it up for a study. It was regularly cylindrical, and when fitted up with a stove and other arrangements, made an ample and convenient apartment."

A hollow trunk of an enormous sycamore was fitted up with the requisite appendages and made use at Utica, N. Y., as a retail shop; and it was afterwards carried to the city of New-York for a show. The following notice of such an object, which was exhibited in the saloon of the American Musuem, and supposed the same that was used at Utica, is extracted from the New-York Traveller. "A sycamore tree of most singular and extraordinary size has been brought to this city from the western part of this State. The interior is hollowed out, and will comfortably accommodate some 40 or 50 persons. It is splendidly furnished as a sitting room, and contains every article of elegance and usefulness. It has a handsome piano, sofas, glasses, and mirrors, of fit and becoming style; and is decorated with pictures and fancy articles."

13. Of the *pines* of North America, Michaux describes fourteen species, some of which grow to a great size surpassing in height all other trees of the forest, and are very valuable for timber. He measured near Norridgewock on the Kennebec, the trunk of a white pine felled for a canoe, which was 154 feet long, and 54 inches in diameter. The greatest height attained in that region, by the pine, he states at about 180 feet.

Mr. Douglas, a botanist, who was sent out from London, in 1825, to explore the northwest coast of America, mentions two species of pines which grow to an enormous size. One of these species called the *Pinus Douglassi*, found on the banks of the Columbia, grows, as he states, to the height of 230 feet, and is upwards of 50 feet in circumference at the base. The other species, called the *Pinus Lambertiana*, was found in Northern California. "One specimen, which in consequence of its having been blown down, Mr. Douglas was enabled to measure, was 215 feet in length. 57 feet 9 inches in circumference at three feet from the root, and 17 feet 5 inches at 134 feet. It is probably the largest single mass of timber that was ever measured by man: though some of the growing specimens of the same pine were evidently of greater elevation.—*Timber Trees.*

Lewis and Clark in their "Expedition." mention six species of firs or pines in the country watered by the Columbia, the largest of which is doubtless the same as that called *Pinus Douglassi*. "This species grows to an immense size, and is very commonly 27 feet in circumference, 6 feet above the earth's surface. They rise to the height of 230 feet, and 120 of that height without a limb. We have often found them 36 feet in circumference. One of our party measured one and found it to be 42 feet in circumference at a point beyond the reach of an ordinary man. This trunk for the distance of 200 feet, was destitute of limbs. This tree was perfectly sound, and at a moderate calculation, its size [height,] may be estimated at 300 feet."

14. The *mahogany*, a tree found in the West Indies and the central parts of America, is highly valued for its timber. It is a tree of rapid growth, but supposed to be not less than 200 years in arriving at maturity: its trunk has often a diameter of 4 feet; and the timber of a single tree sometimes produces $4,000 or $5,000. The mahogany, or "*Swietenia mahogani*, is perhaps the most majestic of trees; for though

some rise to a great height, this tree, like the oak and the cedar, inspires the spectator with the strongest feelings of its firmness and duration. It expands into so giant a trunk, divides into so many massy arms, and throws the shade of its shining green leaves, spotted with tufts of pearly flowers, over so vast an extent of surface, that it is difficult to imagine a vegetable production, combining in such a degree the qualities of elegance and strength, of beauty and sublimity. A single log, imported into Liverpool, weighed nearly 7 tons; was, in the first instance sold for £378; resold for £525; and would, had the dealers been certain of its quality, have been worth £1,000."—*Timber Trees.*

15. The *apple-tree*, though not to be compared, especially in height, to the large forest trees above mentioned, sometimes grows to a considerable size. Mr. E. Hall, of Raynham, Mass., states, that there are two *apple-trees* standing near his house, the circumference of one of which is 13 feet 5 inches, 5 feet from the ground, and 12 feet 2 inches, 3 feet from the ground, of the other 12 feet 2 inches, 1 foot from the ground, and 11 feet 6 inches 3 feet from the ground; and the reputed age 130 years. Mr. J. Ives states, that in Wallingford, Vt., there is an *apple-tree*, whose circumference is 8 feet 4 inches 1 foot from the ground; and about 50 yards distant from it, there is a *butternut tree*, the circumference of which is 9 feet 2 inches 18 inches from the ground, and that the branches extend over a tract of land 5 rods in diameter.—*N. E. Farmer.*

On the Rotation for Grain Farms.

[FROM THE FARMER'S REGISTER.]

Many publications in the Register disclose a great difference of opinion on the routine of cultivation in a grain country; and some persons improvidently adopt plans without reference to the circumstances by which they ought to be governed. I possess no science in agriculture, and my opinions are the result of a limitted experience; but I think the most profitable and advantageous system depends upon the quality of the soil, its state of fertility, and the means possessed for its cultivation. Large crops may be made; but the expences may absorb all the profits. My aim is to combine profit and improvement. Many years ago, when actively engaged in other pursuits, I purchased a small farm, which had been greatly exhausted under the three-field system. I divided it into five, planted one into corn, in which I sowed wheat; and as soon as I got my fields set in clover, on clover fallow in addition. Under this system my lands improved, and my crops were good; the fallow generally yielding fifty per cent. more than the corn ground. A long-continued application of gypsum injured my wheat crop, but gave strength to the grass, which I found could not be subdued by a hoe-crop once in five years. Since that period, other lands have fallen into my possession; and having nearly relinquished all other pursuits, agriculture has become an object of greater interest. My lands are now divided into four fields, one of which I cultivate in corn, and another in wheat. I gather neither tops nor blades. My corn fields remain over a year, and is then sown in wheat, and the

next spring in clover; after remaining two years in clover, it is planted in corn. I have some lots in orchard grass, which supplied the loss of the fodder. The clover field, at maturity, is surrendered to my stock. The advantage of this system is easily computed: the month of September which was formerly spent in gathering fodder, is now devoted to manuring, and preparing my fallows. One good ploughing rolling and harrowing will put them in good order, and my wheat can now be put in with ease and expedition. I select the most favorable time from the 5th to the 25th of October. I suffer my corn to remain in the field till the shuck becomes dry, which gives it I think a more perfect maturation; and in the time between sowing wheat and gathering corn, I can always find useful employment. After my corn is gathered, my horses, colts, dry cattle, and sheep are turned into my stock-field, where they find sufficient provision till the first of January, and sometimes till the middle. The shucks and straw are abundant for the winter, with a small allowance of corn for my horses. As an improvement to my system, I intend to enlarge my cultivation of ruta baga; for though you place this crop in the list of humbugs, I deem it very valuable, particularly in the spring, when cattle eat dry food with great reluctance.

The objection which I have heard urged to leaving a corn-field unsown, is, that the ground sustains injury by remaining bare. This has not been my experience. My corn is cultivated before harvest, the crab-grass and foxtail soon spring up; it grows luxuriantly till frost, when the cattle are turned into the field; they tread it into the ground, which I think tends more to improvement than forest-leaves, which are now extensively used in Virginia. Some of your correspondents speak of ploughing in clover in the month of June when in full bloom; by this and a second ploughing, harrowing, and rolling, a field may be well prepared for wheat; but this requires hands and horses dispensable at other periods of the year. In the month of June, I am under hard pressure in cultivating my corn, and cutting hay. I readily admit that a clover-fallow, in a state of perfect preparation, will produce more than a stock-field fallow; but doubt if provident farmers are generally able to have their clover fallows in the best order. A gentleman who has seen one of my wheat fields within a few days, thinks, if there be no disaster, it will produce thirty bushels to the acre. My calculation is not so high. It is the nature of man to be confident of his own schemes and plans, and to attach little importance to those which differ from them. Probably, in my humble calling, I may be under strong delusion, but I believe a farm cultivated for ten years, with four fields of fifty acres each, and twenty separate acres for hay, with three acres of ruta baga in the corn field, and worked by four men and two boys, would be of more value, and produce more clear profit in this region, than under any other plan of cultivation.

I insist on the value of ruta baga. I have great respect for chemical experiments; but when experiment and fact are at war, I adhere to the latter. Fat cows, rich milk, and sweet yellow butter, are better proof of the nutritious properties of this plant, than the experiments of a legion of chemists. I think our encouraging prospects for a crop of wheat go to contradict the notion that the earth is waxing too cold for its production. It is strange how men of science differ. John C. Simmes, whom I take to be no mean philosopher, entertained the

opinion. that there was a fine fertile country in the bowels of the earth, and that the Lapland deer entered it at the pole in the winter, and grew fat on the pastures; and with proper encouragement, he would have effected a settlement there, if he had found his theory true. Other philosophers hold that the whole is a mass of fire. Of the two I rather incline to Mr. Semme's theory; not from the lights of philosophy, but the impulse of taste. I do hope that the secretary of the navy will specially instruct the scientific corps attached to the exploring squadron, if they reach the Pole, to take a peep into the great hollow and fully ascertain whether it is filled with green pastures or burning fire. RUSTICS.

Eastern Shore, Md. 10th May, 1838.

Letter from Dr. D. Stebbins, of Northampton, Mass., to the Congressional Committee on Agriculture.

[FROM THE NEW-ENGLAND FARMER.]

Northampton, County of Hampshire, Mass.,
February 10, 1838.

I have received a communication from the committee on agriculture, dated Washington City, January 30, 1838, for answers to several interrogatories about the culture of the mulberry and sugar-beet. The committee must be aware that the silk business of America is but in its infancy; yet, knowledge of the subject is constantly on the increase. Improvements are made from year to year, not only in the culture of the mulberry; but in the manufacture of the article of silk. Let it not, therefore, be thought wonderful, if it should be found necessary hereafter, to abandon our present opinion, practice of culture, and machinery used in the manufacture, for a better mode and more simple machinery, and so cheep as to take place of the domestic wheel, reel and loom. If, in either respect, any improvement can be made, Yankee perseverance and ingenuity will discover it.

The committee will please accept of the aid of Edward Church, Esq., of this place, who has long resided in France; and, while there, became very much interested in the subject of sugar from the beet; I presume that he possesses as much information on that subject, or even more, than almost any person in the United States, and have engaged him to reply to the subject of beet-sugar.

On the subject, or respecting the culture of the mulberry, it would afford me great pleasure to present the committee with an *infallible* mode of treatment, which would be applicable to every variety of climate, and the inconstancy of the weather for several years past. But so variable have been the seasons, that the successful mode of culture and protection of the tree during one year, has disappointed the cultivator the next year.

1. In reply to the first question; I began the examination of the mulberry business several years since; but did not commence the cultivation of the multicaulis until 1833, and ever since have carefully watched the progress.

2. Respecting *soil*, *situation*, and *exposure*; I have found that our *poor*, *light*, *dry*, and even gravelly soil, is better adapted to the culture of the multicaulis, than our richest lands. The *location* or *situation*

should be high, or elevated above the danger of water collecting about the roots.

On such soils, although the trees would not attain the height of trees grown on rich land, yet the foliage would be more numerous; and the chance of having the trees ripen, or form hard wood for cuttings, and sustaining our winters, would be enhanced.

3. Respecting the *most valuable mulberry* for cultivation; its *capability* to endure the *cold* and *frost;* the *quantity* and *quality* of foliage; *labor* of culture and *stripping*. These questions will be answered with reference to this climate; and will include not only my own observation and experience but the experience of others of my acquaintance, in whose opinion I have the utmost confidence.

I commenced with the *Italian* white mulberry, and have used also the *black* and *red* mulberry; each of which requires good soil; no matter how rich. I found that, although the worms would feed well on these, yet they were equally fond of the multicaulis, which was selected for its large leaf, nutritious quality, and tender fibre, which the worms can eat, while the fibres or ribbs of the white mulberry are so ligneous as not to be edible. Eighty pounds of multicaulis foliage are considered equal to one hundred pounds of the Italian white, for feeding worms.

The tree or shrub commonly known as the multicaulis, was found in a garden in *Manilla*, cultivated as a tree of ornament; and, to distinguish this from all other mulberries, is now called the *Manilla Multicaulis*, and particularly to distinguish it from *another tree*, more deserving of *multicaulis*, on account of its capacity to produce more numerous stalks and branches.

Although the *Manilla multicaulis* has a very large leaf, grows rapidly, and the silk worm is fond of it; yet, in consequence of its rapid growth, the stalks are often so green and tender, that, when overtaken by early frost, they are liable to be injured, before the wood has been sufficiently formed to endure cold and frost.

Nevertheless, the *Manilla* multicaulis is so valuable a tree, that experienced cultivators have told me that, if it should become necessary to take them up every autumn, protect them during winter, and re-set every spring, it would be much better than to cultivate the white mulberry; and that the culture of an acre of mulberry would require no more labor and expense than that required for an acre of Indian corn.

But there is another mulberry alluded to—the *Canton* multicaulis—so called from the place of its derivation, being the product of seed which the *Canton mission* were requested to procure, being considered the very best and most approved mulberry used by the Chinese, and is believed to be the first genuine seed ever imported into this or any other country. It was obtained under very favorable circumstances, such as have not often occurred; and the same mission have recently forwarded more seed for next spring's use.

That the *Canton* multicaulis is the true kind used by the Chinese, is made evident from a set of historical paintings from China, and from the seed growing at the foot of the stalk, different from other mulberries.

From the experience I have had, I concur in opinion with those who have cultivated the several kinds of mulberry, that the *Canton* multicaulis is deserving of the first consideration, and to be preferred to all others; not only on account of its equal capability of enduring

cold and frost, but from the number, quality, and size of the leaf. Although not so large as the Manilla leaf, yet a leaf of the same size is considered much heavier than the Manilla—some say double the weight.

I have cocoons in possession, made by worms which were fed exclusively upon the foliage of the white mulberry; and another parcel fed exclusively upon the foliage of the *Canton*. The latter have a lustre and brilliancy far surpassing the former; and the difference is nearly as great as between the Merino and wool of native sheep.

It is the opinion of horticulturists and those best acquainted with the propagation of trees or plants from seeds, that trees from seed withstand the severity of climate better than trees propagated by any other mode.

Another circumstance occurred last autumn, in favor of the *Canton;* I had the *Canton* and *Manilla* trees, and another kind, called the *Asiatic* seedling, growing side-by-side in my garden, each having the same exposure to an untimely and severe frost, when the *Manilla* was much injured, the *Canton* and *Asiatic* escaped unhurt; and two other kinds called the Chinese and Smyrna were uninjured.

These seedlings, we hope, will be a most valuable acquisition to the list of mulberries adapted to the feeding of worms, and enduring the cold and frost; nevertheless, great caution is necessary in the use of imported seed; for instance, seed grown upon the multicaulis tree, will not produce a plant like the original tree; at least, it has so proved under my observation. The leaf is different in shape, and not one-fourth so large as the original; neither do the seeds produce trees which furnish a uniform leaf in shape or size. There is often deception in seeds procured at foreign seed-stores; sometimes the vitality of the seed is destroyed, or otherwise injured by neglect. For these and other reasons which might be offered, purchasers of seed have been disappointed, and the mulberry cause injured; because they have expected too much, or that, by the seed of a certain *name*, they should obtain the genuine tree. The peach, apple, and some other trees, from seed or stone fruit, when planted, produce a great variety; perhaps not one seed in a thousand shall produce a tree, in all respects like the original. It is advisable to have no dependence on the seed, but to procure trees which have developed the true character.

Having mentioned the *Canton* mulberry as first on the list, yet some who do not know the Canton, would have the Manilla stand at the head of the list of the most valuable mulberries. The *Asiatic* and *Chinese* may be the next best, on account of their capability of enduring cold and frost; the leaf of which, in shape resembles the *Canton*, but not so large; each of which, however, on account of the numerous buds on the stalks, may produce as much weight of foliage, and of as good quality, as the Manilla multicaulis of the same age. But should the Manilla multicaulis utterly fail of acclimation in this latitude, resort may be had to the *Canton*, *Asiatic*, *Chinese*, and some others which have been propagated from the seed, and give fair promise of adaptation to this climate.

In a more favored clime, the last year, these trees attained a much greater height and larger leaf, than in this place.

4. Respecting the *best mode* of cultivation, *stripping*, *value*, *expense*, and *profit* of an acre of mulberry, I shall not only communicate my own experience, but that of the most skilful cultivators of this region.

In *this climate*, the culture, setting out mulberry roots, or cuttings,

commences at the usual time of making our gardens, after the spring frosts, and when the earth has been suitably warmed by the sun—last April or beginning of May; and soon as the foliage has grown to the size of an apple-leaf, or the full size of the white mulberry leaf, (about the 15th or 20th of June,) the eggs may be brought out for hatching; and, if they can be kept back, so as to be hatched at different times, as the foliage multiplies, the cultivator will have the advantage of several crops in succession from the same lot of eggs—a much better way than to breed *in*-and-*in*, as it is called. Eggs may be preserved during winter in a cool place; freezing does not injure them; but before spring, they should be secured in glass bottles corked tight, to exclude the external air, and each bottle of eggs to be put into an ice-house, placed on a *cake* of *ice;* if set upon a shelf, they would hatch, even in an ice-house. Eggs thus secured, may be kept back, save much labor, time, and expense. As one class of worms are advanced, another can succeed them on the same shelves or hurdles. In this way, the same number of trees would feed double the usual quantity of worms.

In gathering the foliage, the buds must not be injured, nor the extreme ends of the limbs deprived of the leaves, leaving two or three leaves at the end untouched; commencing on one side of the field, and when once gone over, there will be a new crop of leaves ready at the place of beginning; and thus the foliage may be gathered several times from the same shrub or tree, whether the product of a root or cutting. I had roots and cuttings set out last spring, the foliage of which was gathered three or four times from the same trees, without injury; indeed the trees apparently grow better by having the leaves taken off so frequently, always leaving the buds uninjured, and the extreme ends of the branches without stripping. Instead of stripping the leaves, each leaf should be taken separate; if the bud should be injured, it would be spoiled for a cutting, or even foliage. Frequent defoliation of the mulberry does not injure it, although such treatment would spoil some other trees.

When trees are started from cuttings, it will often be found that a shoot will grow several inches before there is any root formed; in this case the support is derived from the atmosphere, instead of any assistance from the root, as is usual with other trees.

Vegetables of rapid growth are said to perspire their weight in twenty-four hours; this rapid evaporation or perspiration will account for so many cuttings failing to become trees; the leaves become discolored, wilt, and the plant is ruined. But to avoid this, let the cuttings be watered in dry weather, and take off the leaves until roots shall be formed.

Respecting the *cultivation*, the earth may be stirred, or the trees hoed so frequently as to prevent the weeds growing; but not after the first of August, that the trees may have opportunity to form wood; and the location must be so elevated and dry as to be out of the way of watet setting near the plants.

Respecting the *value* of an acre set with mulberry, it depends on the price of the mulberry and number of trees set therein. If the trees are set 2½ feet apart in the rows, and the rows three feet apart, an acre would take 5,808 trees, which at 25 cents each, would be worth $1,452. Some prefer to have the rows 4 feet apart, and 2 feet apart in the rows; in this case it would require 5,445 trees to the acre. But provided an acre of ground shall be set with cuttings, the rows two

feet apart, and 1½ foot apart in the rows, 14,520 cuttings might be set in an acre, which at $30 cost 1,000 or 3 cents, would amount to $453 60, to stock an acre. It may be understood that a purchaser wishing to stock an acre of ground, the trees and cuttings could be purchased at a less price than above stated.

Taking into consideration the number of trees the most proper for an acre, and a reasonable price for the trees, the *average* price of an acre of land set with mulberries, including the land, might be worth from 750 to 1,000 dollars investment.

The *cultivation* of an acre of mulberry would, of itself, be no more than that of an acre of corn; but, including the *gathering* the leaves, *feeding* the worms, and *reeling* the silk, need not exceed 200 dollars. The *profits* of an acre of mulberry would depend upon the fidelity with which the worms are fed, and the quantity of raw silk made from the cocoons.

Some cultivators assert that an acre of ground set with mulberry will, the second year, produce foliage sufficient to feed 1,000,000 of worms, and that number of cocoons will make 333⅓ lbs of silk. I have no personal knowledge of one acre having been set apart for that purpose; but from experiments made with certain number of trees, in proportion to the acre, it has been ascertained that 100 lbs. of raw silk may be made from an acre the first year of setting out; and if the roots can be preserved without removal during the winter, a much greater quantity of foliage would be furnished, and, of course, a greater quantity of silk might be made the second and third year; so that the maximum might be 300 lbs. or more of silk to the acre. But assuming the minimum quantity, (100 lbs. from an acre,) it would yield the cultivator a greater profit than from any other product from the soil. The last year I requested several cultivators to make thorough experiments to ascertain the *certain* profits of an acre. Only one, however, met the application with the precision desired. He, by strict economy of time, labor, and expense, although he gave *three* dollars per week and board, to two experienced females, as teachers in gathering foliage, feeding worms, and reeling silk, found that his silk cost him only *two dollars* the pound, and estimates his silk to be worth at least six to seven dollars the pound, on account of excellency of the reeling, for which he has the liberal bounty of the state, and also, a premium from the Agricultural Society. The quantity and value of silk depend on the skill and perfection of reeling.

The value of *American* silk far exceeds the imported raw silk, not only in lustre but strength of fibre, and the small comparative waste in the manufacture; and is probably worth 25 per cent. over the imported article of raw silk.

The same cultivator informs me that, the last year, being a year of experiment, attended with loss of time and expense, which he can avoid another year, he feels confident that he can hereafter make raw silk at $1 50 per pound.

5. Respecting the most valuable silk worm; Perhaps the large gray or black one-crop worm on all accounts is equal to any other. There are several varieties of worms—one called the two-crop worm; but one good yield is worth more than two poor ones, with imperfect cocoons.

In China, where several crops are taken in succession, from hatching eggs of the preceding crop, it has been found that the quality of each succeeding crop of silk is deteriorated, and that silk grown in the elevated or northern regions of China, uniformly commands or obtains

20 per cent. more for any quantity of silk, than for silk grown in the warmer latitudes; and for the same reason that American silk is superior to that imported. It has been thought that the Chinese seldom or never export the silk grown in the cool regions, but that it is retained for the superior fabrics. Eggs, to be of good quality, must have the maturity of age. The usual time of hatching the first parcel of eggs, in *this climate*, is from the 15th to the 20th of June, or as soon as the mulberry leaves have a size to commence gathering. 3,000 worms, (or even 2,000 or 2,400, if well attended,) will make cocoons sufficient for one pound of silk.

The *quantity*, *quality*, and *value*, and *market* of cocoons depend very much on the attention of feeding the worms, ventilation and cleanliness of the cocoonery; in cold seasons the worms do not make so perfect cocoons as when the weather is mild during the time of feeding.

As to a market for cocoons, the several silk factories and reeling establishments will readily purchase or reel them on hire; and that the producer should receive the benefit of good cocoons, instead of purchasing by the pound, a fair price would be given for any quantity yielding a pound of silk. The cultivator must, therefore, see the propriety of so faithfully feeding the worms as to produce hard and sound cocoons.

But the cultivator would derive the greatest profit by reeling his own cocoons, as every family might do with very little expense.

6. The legislature of Massachusetts give a generous bounty to encourage the growth of silk—about sufficient to cover all the expense of gathering the leaves, feeding the worms, and reeling the silk; so that every pound of silk raised and made in Massachusetts may be considered a clear profit to the cultivator; rent of the land, taxes and interest of investment not included. Nevertheless, even these items may be overcome in a very short time.

The legislature of Massachusetts offer a bounty, on the manufacture of beets into sugar, of three cents on the pound—probably sufficient to cover the expense of manufacture.

Finally. On the subject of mulberry and silk, although it has engrossed much of my time and attention under the most anxious solicitude for its success, and with the persuasion that it would ultimately be found the most lucrative business which the cultivator of the soil could pursue, yet, that any certain infallible rules and modes of procedure, can at this early stage of the business be pointed out as applicable to all future years, I do not believe. *But there must be a starting point*, and we must be guided by the best light now before us. It is with great diffidence I enter on the subject to be laid before the committee of Congress, being aware that I may differ in *sentiment*, *practice*, and *opinion* from other more experienced cultivators, and that it may be found expedient hereafter to relinquish present and adopt new measures. But when intelligence shall be received and laid before the committee from various sections of the United States, I feel confident that the committee will find matter to report favorably on the culture of silk in this country. Respectfully yours,

DANIEL STEBBINS.

To the honorable Chairman of the
Committee on Agriculture, Washington City.

P. S.—There are in this place, two large silk factories doing a profitable business.

Preparaption for Pasturing.

[FROM STEWART'S STABLE ECONOMY.]

Grooms are much in the habit of giving the horse a dose or two of physic before sending him to grass. I do not think that any is necessary, yet it appears to do no harm. Physic, they say, prevents the corn from fighting with the grass; but this is a nonsensical theory. The horse may have tumid legs, or some other thing the matter with him, and for that physic may be useful. It would be so, whether the horse went to grass or remained at home. But so far as the mere change of diet and lodging is concerned, physic is qutite unnecessary. To prepare the horse for exposure to the weather, the clothing to which he has been accustomed is lightened, and then entirely removed a week or two before turning out. The temperature of the stable is gradually reduced, till it be as cool as the external air. These precautions are most necessary for horses that have been much in the stable, and particularly in a warm stable. If the horse go out at the end of summer, or in autumn, he should go before his winter coat is on. If its growth be completed in the stable, its subsequent increase may not be sufficient to keep the horse warm. In autumn he should not go out while moulting. For eight or ten days previous he should not be groomed. The dust and perspiration which accumulate upon the hair, seem in some measure to protect the skin from rain and from flies. The feet should be dressed, and the grass shoes, or plates, applied a week before turning out. If injured by the nails, the injury will be apparent before much mischief is done. At grass it might not be noticed so soon. On the day of going out, the horse should be fed as usual. If he go to grass when very hungry, he may eat too much. Indigestion will be the result, and next morning the horse will be found dead. Weather permitting, night is usually chosen for the time of turning out. The horse is not so apt to gallop about. Let loose in the day-time, many are disposed to gallop till they lame themselves, and to try the fences. In autumn, or early in spring, the stable preparation for grass is often insufficient. If the horse be tender, or the weather unsettled or cold, he may require to be taken home every night for, perhaps, the first week. For eight or ten days longer, it may be proper to house him on very wet or stormy nights. If there be no sheds in the field, it is an act of charity to bring the horse home when there is snow on the ground. The stable assigned to him should always be cool, not so cold as the external air, but never so warm as if he were accustomed to it.

Breeding for the Turf.

[FROM THE AUGUSTA CONSTITUTIONALIST.]

Messrs. Editors,—I see '*A Breeder,*' in the 'People's Press," makes a good proposition relative to the establishment of a Breeders Purse, to be run for at our annual Jockey Club meetings, by native bred horses alone. This is the way to ascertain the qualities of our blood stock, and I think it might not be improper at some future period however, to add to the weights required by the present Jockey Club rules, for we are running into the English error of breeding only your

fly-away runners, without prizing the good old-fashioned, stout, and lasting sort, that can carry their ten stone and upwards—doing their four miles in eight minutes. These are the kind that are to benefit the country—improving our stock for usefulness, the chief reason for indulging an amusement, which is certainly attended with some evils. Suppose a horseman of the common weight of 150lbs. mounted on one of your light, but fleet one or two mile nags, and chased by a cavalry corps on such horses as Mingo, or Berner's Comus, or Eclipse, or Old Bertrand would give us, out of stout, well-bred mares, how long would he live? This is a high and rare call for the services of our horses—to escape from pursuing enemies,—but we wish our stock improved for all the purposes of practical usefulness, down to the common and ordinary concerns of life—for the chase, the carriage, the cart, the plough. The hunter would not wish to outrun his dogs for six or eight minutes, and then walk and lead his horse, (if he could go at all,) during the balance of the exciting contest! Mount him then, on a charger that has the strength as well as the fleetness to carry him through the day, and make him shout among the *first* in at the death. None but boys, mere boys of 80 to 100lbs. can ride the *fashionable* breed for the turf—lads without strength of either body or judgment. They are often unable to control even the weak creatures whom they are called to ride; who run restive, and worry out their strength, before they should be called on for its full exertion; and then it is ten to one if their riders' minds are sufficiently matured to discover and seize the critical moment when the fully exerted powers of their horses shall decide the result of the contest. Breed horses that shall carry *men* whose physical powers can control the unruly, and whose judgments will point to the decisive movement, which shall terminate the race in their favor. How many races are lost for want of such judgment in the youthful riders; I appeal to the experience of every turfman. But for the carriage, plough, &c. what a difference would our equipages manifest with fine-formed bloods in the harness! None of your short-legged, big-bellied sort, that puff and blow as they waddle along, some three or four miles only an hour. No; give us your noble-formed, high-bred, generous-blooded animals, whose spirit and strength, not less than their docility of disposition, shall make it a real pleasure to wheel over our plains like Greek warriors of old. And for our ploughs, &c. why the very mules from blooded mares are worth 50 per cent. more in briskness, strength, and durability, than from your cold-blooded, long, slab-sided mothers of the present day.

But I have departed from my design when I began this article. It was, if possible, to excite a greater emulation on the subject of fine stock among our breeders, and for that purpose to propose, in addition to 'A Breeder's' proposition, a *County contest* for breeders alone. For instance let Richmond throw down the gauntlet to Burke, Columbia, or any other county in the state of Georgia, for a series of 1, 2, 3, and 4 mile heats, with high weights, for 2, 3, and 4 years old untried horses of the native stock of their respective counties. By *untried*, I mean those that have not appeared on the turf in any public race. The details of the contest, I leave for others, satisfied with the suggestion of the proposition.

ANOTHER BREEDER.

Harvesting of Corn.

[FROM THE FRANKLIN FARMER.]

To the Editor.—As the season is approaching in which the farmers will commence the securing the abundant crop of corn with which a bountiful Providence has blessed our country, it may be pertinent to the occasion to offer a few remarks upon the best mode of harvesting the crop.

Our Virginia ancestors and those who think it wise to plant and cultivate and gather as our fathers have done, pursue the old method; about this time [June] they gather the blades below the ears of corn—after they consider the corn to be ripe, they top the stalks and secure all of the fodder in stacks for winter use. In November they pull the corn and remove it to cribs, where it is husked out at leisure. This mode is rapidly yielding in the stock districts to that first introduced among the graziers on the south branch of the Potomac. The farmers in the northern and middle districts of Kentucky, and in the Scioto valley of Ohio, have generally adopted this latter mode; which is to cut the stalks, corn, fodder and all, and place them in shocks commonly embracing sixteen hills square.

I have seen the richest crops of many climates gathered, and there is no operation in husbandry so animating as that of cutting corn in the mode just mentioned. It is a most cheering prospect to see twenty acres of corn pass in one or two days to a condition in which it is prepared to keep in the field throughout the winter. This remark is predicated particularly upon the plan of riddling the squares, instead of cutting the whole square at once. It will readily occur to any observing mind, that as corn does not ripen with precise regularity, if the entire square is cut out at once, some of the corn will mould, and sometimes even the fodder will be affected, if the cutting shall be followed by warm or wet weather. To avoid this contingency, some graziers commence with the process of riddling, that is, they select only such part of the sixteen hills square as may be ripe—go through the field in this way, and in ten days complete the cutting of the square. By this process several important advantages are obtained—the greatest amount of fodder is secured, consistently with the paramount object of saving the corn and a nuclues for the shock being formed by the first cutting in the square, the shock becomes settled and stands bettter during the winter. In the rich counties of Clarke and Bourbon, they sometimes cut half of the square on one side and then in ten days finish it. Whilst many graziers in Fayette, Lincoln and Shelby, prefer the process of riddling.

In the course of October and November, these shocks are shucked out, the corn placed in cribs and two of the shocks placed together, or one placed upon the ground and two others put around it.

It is the opinion of practical farmers, that the practice of cutting corn in this mode secures the greatest amount of corn and fodder with the least expense, and is decidedly an improvement on the old Virginia plan, more especially when applied to the feeding of cattle or mules.

T.

Covering Cotton Seed with the Coulter. Benefit of Ploughing Clay-Soils after Rain.

[FROM THE FARMER'S REGISTER.]

Rockbridge, Va. June 23, 1838.

About the 20th of last month, (May,) I planted our *cotton patch.* A part of the seed, (all of which had been soaked in warm water for a few hours, and then rolled in plaster,) was covered with a hoe, say two or three inches deep; the other and larger part, by running a coulter a single time along the drill and through the seed, plentifully scattered in the row. This operation covered most of the seed, and probably at various depths, from one-fourth of an inch to three or four inches. In a few warm days, the cotton *coultered in* was regularly and beautifully up; but not a grain of that covered with the hoe; nor did the latter come up for a week after, nor until the surface of the ground which in the mean time had become cohesive from a heavy rain, was broken with a rake. It then began to come up very leisurely, and as yellow as saffron; and is now at least ten days in growth behind that covered with the coulter.

Again, having ploughed over a field of corn, from the 1st to the 10th instant, I began, a day or two afterwards, to reverse that operation, by running a two-horse harrow over each row of corn. This was continued for a day. We then had a heavy shower of rain, which stopped the harrow for a day or two, when it was again started, and the field finished. I had, lately, several times heard my overseer say that there was a great difference in the corn that had been harrowed before and after the rain. I supposed it imaginary; but being in that part of the field yesterday, where the hands were ploughing, I was surprised at the difference in the corn, *to a row.* That which had been harrowed before the heavy rain above mentioned, was hardly knee-high, the blades generally yellow and somewhat striped, while the rows adjoining, and throughout that part of the field harrowed after the rain, on land of the same quality as that harrowed before it, was waist-high, and of a rich green color. Not remembering at the time what the overseer had said about the difference in the corn harrowed before and after the rain, I accused him of negligence in the application of plaster, when planting the corn. He affirmed and insisted that all had been plastered alike. The boy who had been charged with dropping plaster on the corn just before it was covered, and the hands that covered it, all supported the affirmation of the overseer. Well, then, if by the testimony of two or three witnesses, every word is established, there is a benefit in working our clay-lands after heavy rains, of which I had often heard, and sometimes seen instances, but never one so striking as in the case just mentioned.

R. GRIGSBY.

[We know how to appreciate the good effects of the mode of covering cotton seed above described, by the experience of five years, during which (much to the detriment of our farming and farm-improvement) we were engaged largely in cotton-culture. The plan of covering then pursued, though in principal the same with Mr. Grigsby's, was far more expeditious and economical. After the seed (without any preparation of wetting or otherwise) had been strewed along the shallow furrows made to receive them, large two-horse harrows, (or

drags,) or two smaller harrows coupled together, with straight and pointed teeth, were passed over the whole surface, just as if to cover wheat. The direction of the course was generally the same as that of the cotton-rows; but this was not important, as in crossing, at the ends of the lands, there were very few seeds drawn out of the rows. The seeds were well separated, and mixed with soil, by this operation and placed at all depths, from the surface to two or three inches below. The coming up well of either the upper or lower seeds was almost certain. Though we have abandoned cotton-culture, the same mode of covering seed we still practise on all old corn-land; and continue to approve of it as a great saving of labor, and at the same time as helping much the tilth and good condition of the field, by the thorough and deep harrowing.—Ed. Far. Reg.]

Poultry.

[FROM THE FARMER'S CABINET.]

"She that won't stoop to pick a pin,
Sha'n't stoop to pick a bigger thing."

For many years past, there has been a great demand for poultry and eggs, at high prices, and it seems likely to continue; for the causes which produced it are still in operation and are likely to continue and increase. The increase of steamboat end rail-road travelling in our country has produced an increased demand for all the luxuries of the table, beyond the current means of supply at moderate prices; it therefore becomes the interest of farmers to devote a little more attention to producing those articles which always sell readily and at a good price; particularly as the labor connected with the rearing of poultry, if labor it can be called, is light, and can be performed by the younger members of a family, without infringing on the time devoted to the more important labor of the farm. It is an agreeable relaxation if engaged in a right spirit, as connected with it many pleasant associations.

It should be the care of those who engage in the business of rearing poultry on a large scale, to study sound economy in feeding them, otherwise they may be disappointed in the expected profit. With some there is great carelessness and waste apparent, particularly in feeding with food of a more expensive character than is necessary. Having seen large quantities of poultry raised and fattened for market principally on boiled potatos, I take the liberty of directing the *girls*, who are your readers, to it; hoping that daily, when they boil potatoes for family use, they will put enough in the pot, over and above what may be necessary for the family, to feed the chickens till the next day, and so continue it from day to day, occasionally alternating it with other kind of food for a relish, and depend upon it you will find,

"That a penny saved, is two pence earned."

Q.

Capons.

[FROM THE FARMER'S CABINET.]

In the last number of your highly useful periodical, I observe an article very properly recommending the production of capons, by our farmers and others, for the city markets. Your correspondent has the merit, so far as my knowledge extends, of first publicly noticing this important matter of agricultural economy. I say "publicly" noticing this important matter, inasmuch as several gentlemen of my acquaintance have in various ways endeavored to accomplish this desirable object; but, I regret to say, without the least approach towards success.* Fowls have been by them operated upon in the West India mode, by puncture, and in Chinese and European manner, by incision, but so far the result has been death to the animal, or its nature unchanged. They have endeavored to get information from books, and have even had the assistance of those who *say* they performed the operation frequently in Europe, but notwithstanding all of their attempts at mutation, the object has not, in a single instance which I have heard of, been effected. I am aware that in the West Indies, China, Western Europe, and other countries women and children are successfully employed in this kind of surgery, but it somehow happens that I have never seen a capon in this country; although I must confess that I have frequently heard of them, and with your correspondent "Civis" understood that the art was "easily acquired." Mrs. Glasse, in her directions for cooking a turbot, says, you must "take him;" and I should, by parity of reasoning, suppose that to eat a capon you must first *make* him. Now will our friend "Civis" put us on the right tack between this and next August, by which we may, in the course of another year, both take and *eat* of this delicious bird. If he feels the same interest which myself and many others do, he will doubtless comply with the request. I also agree with "Civis" that it may be made a profitable business in this country, and may hereafter endeavor to point out the mode whereby persons with a very small capital, near our great cities, may make a livelihood, if not a fortune, in an easy manner. It should be remarked, the operation is not confined to the dunghill fowl, but that it is successfully extended to the turkey, goose and duck, both male and female. Should your correspondent find leisure to give us his experience and the *modus operandi* in your next or the succeeding number, I shall then endeavor to offer some suggestions which may be profitable to our farmers and others.

RUSTICUS.

*See Cabinet, Vol. II. page 145.

PART III.

MISCELLANEOUS INTELLIGENCE.

Silk Worms Fed upon Rice.—In a Chinese work on the culture of the silk worm, lately translated into French by M. S. Julien, a curious process is mentioned, the correctness of which has been proved by experiment. It is said that, in China, in order to supply more nourishment to the silk-worms, the mulberry leaves upon which they feed are powdered with the flour of rice. But M. Bonafons of Turin, who translated the work into Italian, from the French, wishing to prove the truth of the Chinese process; powdered the mulberry leaves with the flour of rice, with wheat flour, and with other fecula; and found that these various substances, which otherwise are not eaten by the silk-worms, become, in this case, excellent nourishment, and cause the worms to develope themselves rapidly. The cocoons of the silk worms fed upon rice flour are much finer and heavier than usual. The other kinds of fecula did not produce a satisfactory result; but it is to be hoped that, by experiments made among the European keepers of silk-worms with different farinaceous substances some substitute may be found for the rice.—*L'Echo du Monde Savant.*

$100 *Premium for American Silk.*—An association of gentlemen have obligated themselves to pay to the treasurer of the American Institute, New-York, the sum of one hundred dollars, to be awarded in October to the person 'who shall raise and cause to be manufactured, the greatest quantity of sewing-silk, on not less than one-sixteenth of an acre of land, by succession of crops in a single season, and exhibit satisfactory evidence of the same to the committee of the said institute, on or before their next annual exhibition at New-York, together with the weight of the mulberry leaves consumed, the weight and number of cocoons produced, and the weight of waste silk and floss, and the number and quality of the trees set on the land. The amount of land, and also the weight of leaves which may from necessity be borrowed from any other source to complete the experiment, together with the material facts, to be certified to the committee, on oath or affirmation. To this statement will also have to be subjoined the number and condition of the trees which are produced on the land at the end of the season.' The gentlemen who sign the notice are an ample guarantee that the premium will be paid.—*Cultivator.*

Broom Corn.—If the Yankees have tickled us confiding backwoodsmen with the tasteful inventions of the wooden ham, and the cure-all-pill made of peas steeped in a solution of liquorice, they have on the other hand, laid us under actual obligations for many really valuable discoveries in Mechanics and Agriculture. The uses to which they have put the broom corn constitute a case in point: This plant, so indispensable to the cleanly housewife, is to be seen in small quantities, in almost every corn field in our State; but few of our farmers have regarded its culture in any other light than as a mere incidental object of petty economy and convenience. The Yankees, however, award it a far higher rank in the catalogue of cultivated crops. Not only do their manufactories annually export large quantities of brooms and brushes made of this valuable plant. but they also find its seed highly important as food for all kinds of stock. J. M. Garuet, Esq. President of the Agricultural Society of Fredericksburg, in his annual address to that body, strongly commends the culture of broom corn to the planters of Virginia, and communicates the following extract of a letter from a gentleman in Connecticut, which comprises, in a nut-shell, the whole process of cultivation, its uses and productivaness.

"Our farmers plant their broom-corn in hills two feet apart, and the rows from

three to three and a half wide. The average yield is from 600 to 1000 lbs. of clean brush to the acre, and from 60 to 100 bushels of seed. This, when well cleaned and ground, is esteemed half as good as corn, and is used in feeding stock of all kinds. It is said to be better than oats for horses, and better than buckwheat for feeding hogs. In planting, from 20 to 25 seed are put in a hill, but only ten are permitted to grow."

Value of the Willow.—The importance of the willow to man has been recognized from the earliest ages; and ropes and baskets made from willow twigs were probably among the very first of human manufactories, in countries where these trees abound. The Romans used the twigs for binding their vines and tying their reeds in bundles, and made all sorts of baskets of them. A crop of willows was considered so valuable in the time of Cato, that he ranks the *salictum*, or willow field, next in value to the vineyard and garden. In France, the leaves, whether in a green or dried state, are considered the very best food for cows or goats; and horses, in some places, are fed entirely on them from the end of August till November. Horses so fed, it is stated, will travel twenty leagues a day without being fatigued. In the north of Sweden and Norway, and in Lapland, the inner bark is kiln dried, and ground for the purpose of mixing with oat meal in years of scarcity. The bark of the willow and also the leaves are astringent; and the bark of most sorts may be employed in tanning.—*Arboretum Britanicum.*

Singular Vine—A Native of Oregon.—Among the flowering vines is one worthy of notice. Each flower is composed of six leaves or petals, about three inches in length, of a beautiful crimson, the inside spotted with white. Its leaves of a fine green, are oval and disposed in threes. This plant climbs upon trees without attaching itself to them; when it has reached the topmost branches, it descends perpendicularly, and as it continues to grow, extends from tree to tree until its various stalks interlace the grove, like the rigging of a ship.

The stems or trunks of this vine are fibrous and more flexible than the willow, and are from fifty to one hundred fathoms in length. From the fibres, the Indians manufacture baskets of such close texture as to hold water.

Vineyards and Wine in France.—We collect the following particulars respecting the importance of the grape to France, from Dr. Bowring's Report on the Commercial intercourse between England and France. The vineyards of France cover an extent of 6,600 square miles; and the statistical society of Paris estimate the quantity of wine produced at 998 millions 932,000 gallons, worth at an average about 12 cents a gallon. This wine is disposed of as follows:

Consumed by the proprietors, - - -	198,000,000 gals.
Distilled for brandy, - - - - - -	141,680,000 "
Loss and waste, - - - - - -	91,344,000 "
Loss in hands of dealers, - - - -	44,000,000 "
Exported, - - - - - - - - -	24,530,000 "
Used for Vinegar, - - - - - - -	11,000,000 "
Duty recovered on consumpsion is, - -	308,000,000 "
Fraudulent consumption, - - - -	105,466,000 "

If we allow the population of France to be 40 millions, and deduct the quantity distilled and exported, it leaves about 20 gallons to be consumed annually by each individual; a result which seems hardly reconcilable with the boasted temperance of the French people; though it shows plainly the great importance of the manufacture to the nation.

Disease of Corn—"The French."—There is a disease of corn, popularly called "*the French*," the cause and remedy of which, seem to have been satisfactorily discovered. The plants attacked by this disease, exhibit a yellowish feeble appearance, the blades are wilted, the stalks never attain the usual size and rarely mature any grain. Spots thus affected, are sometimes found in the fields embracing a hundred plants, where the soil is as good as elsewhere. The injury is caused by the black ant depositing its larvæ in the joint just below the ground connecting the raddical or root with the stock. From the punctures thus made, exudes the juice of the plant, which on its discharge forms into a jelly. An excellent remedy is found in the application of slaked lime or leached ashes to the hills when planting the seed, the alkaline or caustic effects of which serve to destroy the ants. We know a case, where, for several years, a colony of ants having destroyed almost every descritpion of vegetation, the land was treated with decided success, the injury remedied, and a good crop obtained, by the applica-

tion of leached ashes. The same farmer, also, in making an experiment on the value of the hydrate of lime applied to the hills of corn, had the satisfaction to find, not only that the growth of the plants was greatly stimulated, but that none of them were affected by "the French" as were others in the same field, to the hills of which no lime had been applied. These experiments seem to us decisive; and we invite attention to them the more confidently, as it is certain, that the proposed remedy, in its action as a stimulating manure, will increase the production of the plants to which it is applied, even beyond that of those not affected by the disease.—*Franklin Farmer.*

Communicated for the Southern Agriculturist.

Monthly Calendar of Horticulture, &c.

FOR OCTOBER.

Cabbages.—This is an excellent time for transplanting cabbages, but let the plants be from European seed, or they will run in the spring. Those from European seed will remain firm. You may also now sow seeds to transplant out for your early spring crop.

Cauliflowers and Brocoli.—If you have any plants of either of these vegetables you may now set them out, and if they pass through the winter you will obtain flowers in the spring, but much attention will be required, and the crop very uncertain.

Lettuce.—You may still sow seeds of three various kinds mentioned in former months. Those from seeds last month should now be set out, either in rows 12 to 14 inches apart, from 6 to 12 inches in the row according to the variety grown; or you may plant a row on the edges of the beds occupied by other crops, which they will not interfere with.

Spinage.—The principal winter crop should now be sown, any of the varieties will answer, but we prefer the "Flanders." The rows should be from 9 to 12 inches apart. They need not be thinned until large enough for the table, when they may be used leaving good healthy plants every 3 or 4 inches, from which the outer leaves may be cut as required for the table. Managed in this way a supply may be obtained during the whole winter.

Turnips.—You may continue to sow turnip seed, and if you make use of the European, they will not be so likely to run in the spring.

Carrots, Beets, Salsafy, and Parsnips.—If sown in the early part of the month, these *may* succeed, especially the first. The others are doubtful. The direction for their culture having been already given, need not be repeated here.

Onions and Leeks.—This is a proper time to plant out these vegetables. Those who live in the neighborhood of large cities, can in all probability obtain the small or seed onion, and those living where these cannot be obtained ought to be provided with plants from seeds sown during the summer. Let the rows be 9 inches apart, and place the plants 6 inches distant from each other in the row. The *Leeks* should be buried deep, and the roots only confined, at the bottom of the hole made by the dibble.

Radishes.—Both the summer and winter varieties may now be sown, for directions see former months.

Artichokes now require attention. All of the suckers or young plants should be removed except three to each hill. A large quantity of manure should be spread around them, and the ground well spaded and made mellow. Those plants which are removed, can be used for making of new plantations, which will come into bearing after the old ones have ceased, and thus for a succession.

Strawberries.—New plantations should now be made, which, with proper management, will produce fruit the next spring.

At a meeting of the Agricultural Society of South-Carolina, on the 18th Sept. the following Officers were elected:

JOHN HUME, *President,*
H. ROSE, *Vice President,*
R. W. ROPER, *Corresponding Secretary,*
H. F. FABER, *Treasurer.*
J. F. O'HEAR, *Recording Secretary.*

At a Meeting of the Horticultural Society of Charleston, on the 19th Sept. the following elections were made:

NATHANIEL HEYWARD, *President,*
THOMAS BENNETT, *Vice-President,*
Dr. E. HORLBECK, *Corresponding Secretary,*
J. F. O'HEAR, *Recording Secretary,*
WM. KUNHARDT, *Treasurer.*

Standing Committee.—Dr. Joseph Johnson, Dr. E. Geddings, J. A. Winthrop, Robert Hume, R. L. Baker, J. Bancroft, and R. Teasdale.

[BY REQUEST.]

At a special meeting of the St. Andrew's Agricultural and Police Society, called for the purpose on Friday the 7th Sept. the following preamble and resolutions were submitted and unanimously adopted.

Mr. President—We are convened on this occasion, to pay the last tribute of respect to departed worth, and to mingle our sorrows and sympathies for the loss of one of the founders of this institution.

Col. JAMES CUTHBERT, is no more. The devoted friend and advocate of Agriculture, the untiring and zealous philanthrophist, now lies numbered with the dead.

To eulogize our departed friend is not our intention; but to hold up the character of a virtuous man is our duty. His sterling worth and usefulness in every thing that was calculated to benefit and elevate society were so often exercised among us, and so generally diffused wherever he was—they alone remind us that a valuable citizen and useful man has fallen under the relentless hand of death.

The death of such an individual is a public calamity. To our immediate society which owed in part its origin, and on which his fostering aid and unremitting exertions and support were always bestowed; his loss is irreparable. The memory of every man, who in his day has benefited or contributed to the welfare of a community, should be embalmed in her affections—his example, his attainments, his character, in short, his whole life should be held forth for the emulation and guidance of her youth, that they and all others may be stimulated to imitate and do likewise.

Be it therefore,

Resolved, That in consideration of the great and extensive usefuluess, the high and honorable character, the many virtues and excellences of the late Col. James Cuthbert, this Society do sincerely mourn and deplore his loss.

Resolved, That while we submit with deep humility to this afflictive dispensation of Almighty God, which in his providence has deprived us of our late associate and fellow member, that we will remember his many virtues, and cherish his memory, and are deeply impressed with the loss this Society and State has sustained.

Resolvd, That we sympathise with his afflicted family in their very sudden and distressing bereavement.

Resolved, That as a tribute of our esteem and respect to the memory of our deceased friend, this Society will wear crape on the left arm for the three next successive meetings.

Resolved, That a copy of these proceedings be transmitted to the family of the deceased.

On motion.

Resolved, That a copy be likewise sent to the Southern Agriculturist and city papers for publication.

Extract from the minutes.

RAWLINS RIVERS, Sec'ry. and Trea.